

هكذا صدق القليل

# FINANCIAL TIMES

EUROPE'S BUSINESS NEWSPAPER

U.S. fear of high-tech piracy may threaten research, Page 19

No. 29,305

Wednesday April 25 1984

D 8523 B

Africa	Sfr. 18	Indonesia	Rp. 2500	Paraguay	Esc. 76
Algeria	Dz. 0.650	Italy	L. 1100	S. Arab.	Rs. 6.00
Belgium	Bfr. 20	Japan	Y. 1500	Singapore	S\$ 4.10
Canada	C\$ 0.70	South Africa	Rand. 1.00	Spain	Pta 100
Ceylon	Rs. 100	Taiwan	N.T. 200	Switzerland	Sfr. 2.00
Denmark	Dkr. 7.26	Thailand	Baht. 50	Turkey	Lira 0.600
Egypt	E£ 1.00	U.S.A.	Doll. 1.00	U.K.	£ 1.00
France	Ffr. 6.55	West Germany	M. 3.00	U.S.A.	Doll. 1.00
Germany	DM 2.20	Philippines	P. 20	U.S.A.	Doll. 1.00
Greece	Dr. 340				
Hong Kong	Hk\$ 1.00				
India	Rs. 15				

## NEWS SUMMARY

GENERAL BUSINESS

### Brasilia tense ahead of key vote

Tension mounted in Brasilia yesterday ahead of today's congressional debate on restoring direct presidential elections to Brazil and ending 20 years of military rule.

Strict controls are in force on all air and road entry points to the capital, and radio and television broadcasts in the area are being censored.

The opposition motion to restore a direct vote is unlikely to succeed, but the Government's tactics are not clear. It may present its own proposal for direct elections in 1988, Page 20

### Afghans take valley

Afghanistan said its forces captured the strategic Panjsher valley, between Kabul and the Soviet border, from rebel guerrillas in a spring offensive.

### Warning from army

El Salvador's army said it had prepared a message for the winners of the May 8 presidential election, telling him to stay out of military affairs.

### Death threat charge

Romanian emigre Jean Paul Gabor was charged in San Antonio, Texas, with threatening to kill Democratic presidential candidate Walter Mondale.

### Nuclear deal

The U.S. and China have ended talks on a nuclear co-operation deal which should be ready for President Reagan to sign when he visits Peking this week, Page 4

### Genoa port shut

Genoa port was paralysed by dockers striking against a management attempt to regain control of its running. 3,000 Japanese dockers began an indefinite strike at 10 big ports.

### Libyans on way

Tripoli sent three officials to London to supervise the departure of the occupants of the People's Bureau, which has been under police siege for more than a week, Page 29

### Threat to dissent

A senior Yugoslav official warned dissenters that the country would use all possible means to stamp out dissent, Page 2

### Indian border clash

Indian and Bangladeshi troops exchanged fire for several hours along their border, where India is putting up a barbed-wire fence.

### Death sentences

A Banjul court sentenced 24 people to death for their part in an attempted coup in The Gambia in 1981, in which 800 died.

### Sadat men dropped

Egypt's President Hosni Mubarak dropped several leading names of the Sadat era from his National Democratic Party's list of election candidates, Page 9

### East Germans held

Dozens of East Germans have been taken into custody after applying to leave the country for West Germany, Page 3

### French drug raid

French police seized six tonnes of hashish and 50 kilos of opium, claimed to be worth \$37m, near Versailles, in what they said was their biggest drug haul.

### Exxon's 3-month profits up 39%

EXXON, world's biggest oil company, reported first-quarter net income up 39.2 per cent to \$1.47bn, underpinning the oil majors' strong recovery, Lex, Page 20, Page 21

### Occidental Petroleum of the U.S.

will this Sunday sign a \$800m deal with China to develop what is said to be the world's biggest open-cast coalmine, Page 4

### NESTLE Group of Switzerland

is in talks which may lead to a bid of over \$500m for Coopervision, a leading U.S. contact lens maker, Page 22



### DOLLAR improved in London

as fears of higher U.S. interest rates, closing at DM 2.6785 (DM 2.677), SwFr. 2.165 (SwFr. 2.165), Y225.65 (Y224.75) and FR 8.230 (FR 8.165). Its trade-weighted index was 128.6 (127.8), Page 39

### STERLING fell 95 points in London

to \$1.498 and was lower at £318 (3219), but bid slightly firmer at DM 3.7775 (DM 3.777), SwFr. 3.125 (SwFr. 3.115) and YFr. 11.6075 (YFr. 11.558). Its trade-weighted index was unchanged at 79.9, Page 39

### GOLD fell \$1.25 in London

to \$383.75. In Frankfurt it was \$2 lower at \$383.25 and it lost \$1.5 in Zurich at \$383.5, Page 38

### COCOA prices continued to surge in London

with the July quotation ending 248 up at £1,894 a tonne, Page 38

### LONDON: FT Industrial Ordinary index

closed 3.8 down at 876.2. Report, Page 33; FT share information service, Pages 34-35

### WALL STREET: Dow Jones index

was up 11.83 at 1,161.33 before the close. Report, Page 29; Full share listings, Pages 30-32

### TOKYO: Nikkei Dow index

shed 38.86 at 10,761.2. The Stock Exchange index was 3.13 off at 845.38. Report, Page 29

### HONG KONG: share prices

dropped in response to Britain's announcement that it would stop administering the colony in 1997. The Hang Seng index closed 45.83 down at 1,070.02, eight above the day's low, Page 9; Report, Page 29; Lex, Page 28; Leading prices, other exchanges, Page 32

### INTEREST RATES in the Danish

bond market fell sharply yesterday, with the effective yield on 20-year government bonds coming down by half a percentage point to 14.4 per cent, a point lower than at the beginning of last week.

### SPAIN: shareholders of a dozen

electrical utilities face lower dividends under government proposals for reinforcing their finances, Page 22

### UNION CARBIDE, U.S. chemical

company, lifted net profits 123 per cent to \$107m, \$1.51 a share, in the first quarter, Page 21

The editorial content of today's international edition has been restricted because of industrial action by EG Druck und Papier at Frankfurt Societas-Druckerei, where the edition is printed. This prevents the publication of late-breaking news, the East Wall Street report and closing U.S. share prices.

## Nippon Kokan to buy half stake in National Steel

BY TERRY DODSWORTH IN NEW YORK

National Intergroup, the fourth largest U.S. steel company, is linking with Nippon Kokan of Japan, in a joint venture which involves the sale of 50 per cent of its steel division for \$292m.

The agreement, announced in Pittsburgh yesterday, was described as an historic event by Mr Howard Love, National Intergroup's chairman. It brings to an end a period of speculation about the future of National's steel activities after its attempt to sell them for \$575m to U.S. Steel was stopped by the anti-trust authorities.

Mr Jim Haas, President of National Intergroup, said that he expected that Nippon Kokan (NKK), which is the second largest Japanese producer, to take a full managerial role in running the three plants involved in the agreement.

No contingencies or closures were contemplated, he added, and he was confident that the relationship would benefit all employees.

This reference was seen as an important sign to the steel trade union, which only a year ago came into violent opposition with another NKK plant to buy the Rouge Steel plant belonging to Ford Motor company in Detroit. Union opposition was the principal factor in undermining that deal.

Mr Haas said that the new steel company, which will be headed by Mr Love, as chairman, will be run as a separate entity and treated as an investment on the parent group's books.

It would benefit, he added, from NKK's proven expertise in quality and process control.

From NKK's point of view, the deal will be of value in providing it with better access to the U.S. market, which is partially closed to Japanese producers at present, under a voluntary quota arrangement.

Despite continuing pressure on steel prices in the U.S. market, they are higher than prices available in most other markets. In addition, National's operations are concentrated in the higher margin flat rolled products, which are enjoying buoyant demand from the expanding motor industry.

The U.S. company's three plants are also based in the Midwest, which Japanese companies have always found expensive to supply because of transport costs - Japanese sales tend to be concentrated on the East and West coastal areas.

National's steel operations are reckoned to be among the best in the U.S. and have benefited from extensive rationalisation over the past few years. They have been profitable for the last four quarters, a period in which most of the U.S. steel industry has been losing money.

The two sides started talking, said Mr Love, last year, but the talks were broken off when U.S. Steel made its offer. Discussions were resumed again when that deal fell through. Mr Love added that the agreement with NKK will allow the parent group to concentrate on its plans to diversify in the financial services sector and overseas.

## Lagos scraps naira in attack on corruption

BY ANDREW GOWERS IN LONDON

NIGERIA's decision to scrap its currency and start again with a new naira marks a sudden increase in the military Government's attack on corruption and the drain of money from the country.

It is not expected, however, to have more than a passing impact on companies doing business in Nigeria or with the country, and it does not fully address the country's more deep-seated economic problems, according to diplomats in Lagos and foreign businessmen.

The move, announced on television on Monday night by the regime's number two, Brig Tunde Idiagbon, is effectively aimed at depriving naira held outside Nigeria of any value.

With land borders closed from yesterday and all passengers - even diplomats and their luggage - arriving or departing by sea or air subject to rigorous searches for cash, currency held outside the country is "stranded".

An accurate estimate of how much this involves is impossible: some diplomats believe it may not be much more than N1bn to N2bn (\$75bn to \$1.45bn), which is small compared with the massive amount of currency in circulation within the country. The majority of the cash smuggled out of Nigeria in recent years will already have been converted into hard currency.

Nevertheless, foreign observers see the move as an overdue and not altogether surprising effort to staunch the flow of currency abroad. It will also, no doubt, prove politically popular at home as it hits the wealthy and corrupt "saboteurs" so often pilloried by Maj Gen Muhammad Buhari's regime since it seized power on New Year's Eve.

For the many Nigerians with large amounts of cash within the country, the immediate result is likely to be at best huge personal inconvenience and at worst a heavy loss.

From today until May 8, when the naira ceases to be legal tender, amounts of up to N5,000 will be exchanged for new banknotes (in the same denominations, but in new colours) over the counter with no questions asked.

Any sums in excess of this will have to be initially deposited in bank accounts; the depositor will also be asked to produce a sworn affidavit as to the source and ownership of his funds.

Thus it is hoped that those with ill-gotten gains will be exposed. In fact, there is reason to doubt whether the system will operate with great efficiency or that it will

## Moussa plans comeback after acquittal

By David Marsh in Paris

M PIERRE MOUSSA, the former chairman of now-nationalised French investment bank Paribas, plans a comeback on the international financial stage after being acquitted yesterday on charges of exchange control infractions.

M Moussa, who resigned from the bank in October 1981 in the midst of a furious political row over the Socialist Government's nationalisation programme, is understood to be planning to set up with international investors, a Luxembourg-based investment banking institution with a capital of around \$100m.

Yesterday's acquittal, following a long-running trial in a Paris magistrates court, brings to an end one of the most emotional financial dramas in post-war France.

It comes nearly 2½ years after the Government brought charges against M Moussa in what was widely seen as an act of political revenge for his success in freeing from nationalisation part of Paribas' foreign activities.

The court, however, yesterday handed down fines and sentences against former Paribas executives and clients involved in channelling funds into Swiss bank accounts under an illegal cash smuggling network uncovered by French customs in November 1980.

M Moussa, who has been working during the last two years building up a financial advisory company, took a philosophical view of the court case.

Regarding the Government's bringing of charges in November 1981, he said, "I have no feelings of rancour. I can understand that they (the Government) were over-excited."

"It was due to the circumstances and their lack of experience," M Moussa said. "Most of the mistakes they made (after coming to power in May 1981) were because they knew so little about real things. It was not really their fault - since then, they have learnt a lot."

The charges, accusing M Moussa of responsibility for irregularities uncovered in the bank's department handling private clients' wealth, were brought by M Laurent Fabius, now the Industry Minister, in his previous capacity as Budget Minister.

This came shortly after a political furor - in which M Moussa came under scathing personal attack in the National Assembly from M Pierre Mauroy, the Prime Minister - over Paribas' discreet but perfectly

## Controversy on dismissal of Saudi minister

BY MICHAEL FIELD IN LONDON

THE DISMISSAL of Dr Ghazi Algosaihi as the Saudi Arabian Minister of Health and the accompanying debate over the greed of the Kingdom's royal family is being seen as one of the most important political events in the country since the occupation of the Grand Mosque in Mecca in 1979.

Dr Algosaihi, who was dismissed at the weekend, became Minister of Health last October after serving as Minister of Industry and Electricity since 1975 in 1982-83. He had held both portfolios together.

The Health Ministry is one of the Kingdom's biggest spending agencies, with a 1983-84 budget running at about \$8m.

Dr Algosaihi was the most effective of the modern technocrat ministers in the Saudi Arabian Government and was extremely popular with the Saudi bourgeoisie - and particularly with the Kingdom's press. His dismissal is important because it followed a direct challenge to King Fahd.

The reason for the dismissal is that Dr Algosaihi had incurred the disfavour of senior members of the Saudi royal family and had challenged the King to support him in a poem he wrote for the Riyadh newspaper, Al-Yasir.

The 50-line poem was published on March 5 and was entitled "Al-Mutanabbih's last message to Saif al-Dawlah".

The two characters in the title were a famous court poet and the poet's employer, Saif al-Dawlah (The Sword of the State), who ruled in Aleppo in the tenth century.

The poem ran roughly as follows: "Why have you forsaken me and why do I no longer receive your friendship? Why do you listen to these false voices? They deceived you and their deception was to your liking, but previously you never used to be moved by this perfumed falsehood."

"I am not going to compete with these cheap people... Instead I shall take to the desert. The desert is more generous. Its munificence is not cut off... It is more truthful than a friend whose friendship is changeable and of varying colours... Never mind the consequences, I am not interested in wealth."

"Oh my Lord, oppression is not to be welcomed, but if this is what you want then so be it... A pen which is bought and sold is not the equivalent of one which writes with tears (the blood of the eyes) streaming down it."

It is suggested that Dr Algosaihi wrote his explosive lines specifically to cause a furor, in order to delay what already looked like his inevitable dismissal. The Saudi royal family bates nothing so much as to be seen acting in response to internal or external political pressures.

The minister's career reached a crisis because he had made enemies. Most seriously, in the Council of Ministers he had challenged Prince Sultan, a full brother of the King and Minister of Defence, on a Spanish defence contract which had not gone out to tender.

The Prince in turn had challenged Dr Algosaihi over a medical contract. The Minister replied that this had not been offered for tender because it was part of an Australian Government technical assistance programme.

The poem was an open criticism of the King's failure to support Dr Algosaihi in this battle, which was seen as being related to the whole issue of the greed of members of the royal family.

This has been manifest in senior princes at the head of ministries receiving payments from suppliers to



Dr. Ghazi Algosaihi

## Inflation hopes boost dollar

By Max Wilkinson in London and Nancy Dunne in Washington

THE DOLLAR showed a renewed boost of strength yesterday, borne up by optimistic pointers for U.S. inflation and market fears about industrial unrest in Britain and West Germany.

In the first day of European trading after the Easter break, the dollar rose strongly, to close in London at DM 2.6785, more than 2 pence higher than its close on Thursday.

Although trading was thin, the market appeared to endorse the upward movements of the dollar in New York over the Easter period when the U.S. currency breached the DM 2.65 "resistance point" in spite of heavy intervention by the West German central bank, the Bundesbank.

The dollar's strength, helped before Easter by the larger than expected first-quarter growth rate for the U.S. economy of 8.3 per cent, was given further momentum yesterday by the U.S. consumer price index for March.

The index rose a modest 0.2 per cent last month, an increase widely interpreted as heralding good news of a moderating economy.

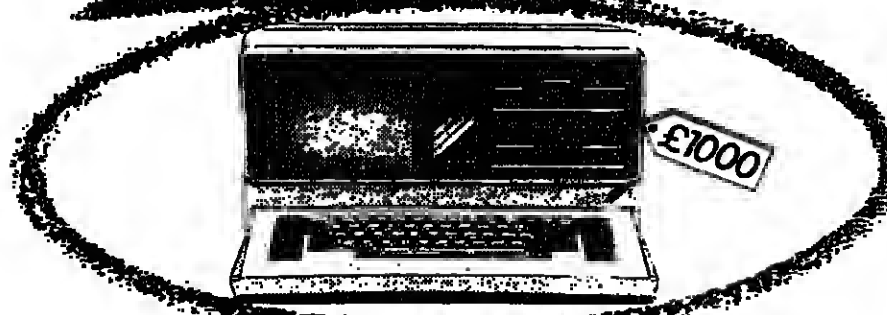
Mr Martin Feldstein, chairman of the Council of Economic Advisers, said that the rise was "further evidence that the economy is not overheating." He noted that even without a "welcome" 0.1 per cent decline in food costs, consumer prices rose only 0.3 per cent last month.

The drop in food prices, the first since last July, represented a sharp turnaround from the 2.4 per cent increase in January and the 0.9 per cent climb in February. Fuel oil prices declined 4.3 per cent. Transport costs rose by 0.9 per cent and medical costs by 0.5 per cent.

The report was especially welcome after a January increase of 0.9 per cent and February's 0.4 per cent rise.

Many analysts, worried that the economy had surged too fast too soon, were caught unprepared by the moderate increase. For the first quarter, when the effects of last summer's drought and December's freeze were reflected in food prices, the index rose at a 5 per cent annual rate.

**WANTED. British made portable bus, micro, incl. Fin. Plan, Exec. Desk Top, w.p. & filing software. Must have BT aprvd. on-board modem and auto-dial for direct connect to Prestel, Micronet 800, and other Viewdata systems. Built-in screen, RS232 and printer interfaces, twin disk drives and 64K bytes of memory req'd. Should be no more than £1000\* max.**



**FOR SALE: The new Wren Executive System. No other small computer offers you more... so why settle for less?**

**WREN EXECUTIVE SYSTEM**

Distributed by: Prism Business Systems Ltd Telephone: 01-253 2277

Carry the company in your hand not on your shoulders

For full details of the Wren Executive System complete this coupon and send it to: Wren Executive Systems, 18-29 Mora Street, City Road, London, EC1V 8BT Telephone: 01-253 2277

Name \_\_\_\_\_  
 Position \_\_\_\_\_  
 Company \_\_\_\_\_  
 Address \_\_\_\_\_  
 Telephone \_\_\_\_\_

Europe	2, 3	Energy Review	15
Companies	22	Exxon's profits	20
America	4, 9	Financial Futures	29
Overseas	21, 22, 24	Gold	38
World Trade	9	Int. Capital Markets	39
Britain	23	Letters	20
Companies	26-28	Market Monitors	29
Agriculture	38	Men and Matters	18
Appointments	16	Mining	25
Arts - Reviews	17	Money Markets	39
World Guide	38	New masterplans	20, 32
Commodities	36	Stock markets - Europe	20, 32
Crossword	37	- Wall St. ... 28-32, 40	
Currencies	29	- London ... 28, 33-35	
Editorial comment	18	Technology	25
		Unit Trusts	36-37
		Weather	29

Montego day: BL's drive for market share	18	Editorial comment: arms talks; civil aviation	18
Hong Kong: China strikes a bargain	19	World trade: U.S. rules for high-tech exporters	19
Portugal: the economic cost of freedom	2	Lex: Hong Kong; Unilever; U.S. oil companies	20
Shipbuilding: UK launch for Finnish giant	14	Nuclear power: problems pile up for the U.S.	24
Electricity: Yugoslavia pays the price of neglect	15	Vehicle design: Survey	Section IV

Continued on Page 20 Money markets, Page 39



EUROPEAN NEWS

Yugoslavia cracks down on dissent

By David Buchan in London and Aleksandar Lebi in Belgrade
A SENIOR Yugoslav official warned yesterday that the authorities would "use all means" to stamp out dissent.

Portugal learns the difficult lessons of democratic government

Diana Smith reviews progress since the revolution ten years ago

A FOREIGN embassy in Lisbon's elegant Rua do Sacramento has just been painted salmon pink—the cor de grac characteristic of houses in the capital.

political, social, and cultural—that the Portuguese had held back for too long. At first such sudden, untrammelled freedom of choice brought irresponsibility, petty vendettas and some vandalism, plus verbal diarrhoea that lasted for several years.

Communist-enforced, arbitrary nationalisations that seized half Portugal's gross fixed capital formation and drove owners into jail, then into exile, bankrupted the country's chances of emerging from an economy decades behind post-war Europe into something solid and diversified.

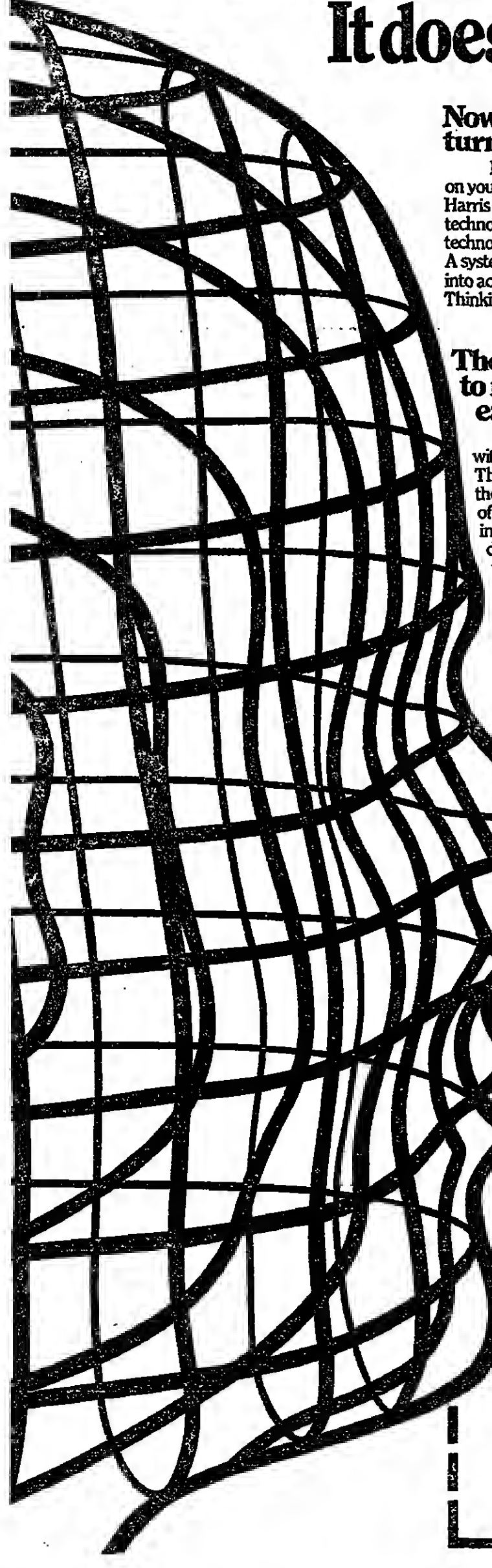
counteracted by ruthless austerity and the lowest paid have had to foot the largest bill. Portugal's most internationally-known politician, Sr Mario Soares, the present Prime Minister, a genuinely compassionate man, faced a Hobson's choice. He had either to go for austerity, hoping it would pay off economically, or he could have taken a softer line, which would have boosted his popularity, but pushed Portugal down the slippery slope to bankruptcy.



REVOLUTION on the streets of Lisbon 10 years ago today. A young soldier sports a flower in the barrel of his rifle.

to learn from it, than young Portuguese a decade ago. Memories of pe-faced adolescents with heavy expressions, talking desultorily about people, never ideas or events, have not quite faded and contrast sharply with the gaiety and good-natured "brashness" of Portuguese young people today.

The new Harris Thinking Office. It does whatever you say.



Now, an office so advanced it turns your thoughts into action.

Imagine an office that can perform any task—on your spoken command. Impossible? Not with Harris. Harris is one of the most exciting names in information technology.

Thought Processors—to make working as easy as speaking.

Every job in your office starts with a thought from you—so Thought Processing is the key to the Thinking Office. It is a range of equipment that will let you input work of all kinds, just by speaking.

Business Processors—to give you the information you need.

And we give you business processing. Word processing and executive workstations that take instruction in plain English. So you—and all your staff—can have instant access to records of all kinds.

From a personal computer, to infinite computing capacity.

System 5000 can link the electronic equipment in your office together into an information sharing system. And that system can extend to a mainframe or mini-computer, to terminals, to printers, modems linking your organisation internationally if you wish.

We can do more for you.

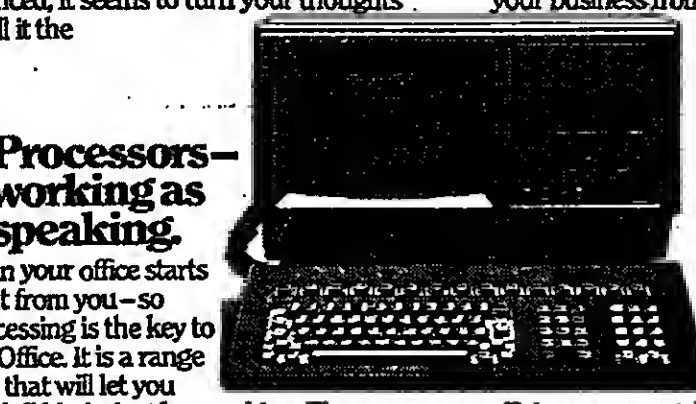
Linking Harris business systems into a Thinking Office can revolutionise your business. The changes it can make to your efficiency are vast. Naturally, you may find Office Automation technology a little hard to comprehend at first—which is why we are ready to help you plan the system that will best suit your needs.

The team behind your office.

We have teams of experts waiting to help you. Experts in training your staff, in helping you get the best from our equipment, Engineers, Specialists in software, in communications, in the areas you need. All there to support you. They're what make our approach different.

Phone for the book.

Find out more about the Thinking Office, with our new book. It's free. Phone your nearest Thinking Office Advisory Service or return the coupon below and discover all the possibilities of the Thinking Office—and how Harris business systems will help you.



For your information, the name is Harris.

- Harris - UK Headquarters
Harris Systems Ltd.
153 Farnham Road, Slough, Berks.
Tel. 34666. Telex 848174
London Office
Harris Office Systems
171 Grays Inn Road, London WC1X 8UE.
Tel. 01-837 6400. Telex 297689
DRG/Barratt - Regional Offices
Aberdeen 832008
Dundee 69351
Livingston 37351
Glasgow 771 0851
Leeds 456944
Manchester 273 7421
Leicester 543557
Birmingham 359 0161
Breston 03317 3921
Northampton 46331
High Wycombe 359951
Bristol 514777
St. Albans 35151
Basingstoke 54331
Tonbridge 366661
Leamington Spa 34371
Peterborough 237733
Swindon 36688
T&D Norton - Ireland
Dublin 724455

I would like a copy of your free new book, The Thinking Office, showing how Harris Thought Processing, Business Processing and executive computing can help my company achieve greater efficiency and improved profits.
To: Harris Office Systems Ltd., 171 Grays Inn Road, London WC1X 8UE.
Name (Mr/Ms/Ms)
Title
Company Name
Address
Postcode
Tel.
My major interest is: Thought Processing [ ] Business Processing [ ]

U.S. grounds Soviet satellite launch hopes

BY PETER MARSH
THE U.S. Government will block any move by Immarat, an international body that operates communications services for ships, to use a Soviet rocket to put into space a new generation of satellites.

PUBLIC AUCTION
Hand Knotted Woolen and Silk PERSIAN AND ORIENTAL CARPETS AND RUGS
at the Holiday Inn, 71-75 Sloane St., Chelsea, on Sunday 29th April 1984
Preview 2pm. Auction 10am.
IN A LIQUIDITY CRISIS
Enquiries include: Afghan, Turkish, Caucasian, Kazan, Turkmen, Baluch, Bokhar, Indian, Tibet, plus Persian runners and important silk pieces and others.

FIGHT BIG BROTHER 1984 IS HERE!
ARE YOUR PHONES TAPPED?
Protect the privacy of every telephone conversation. The Tap Alert B 400 checks your telephone 24 hours a day to detect wiretaps and telephone bugs. A flashing red light will warn you day or night if your privacy is in danger.



EUROPEAN NEWS

**Fiat to stop making medium-sized lorries in France**

BY PAUL BETTS IN PARIS

FIAT PLANS to stop making medium-sized lorries in France and will shut its plant at Trappes south-west of Paris. Iveco-Unc, the French subsidiary of Fiat's Iveco truck group, is expected on Friday to announce closure of the large manufacturing plant, with the loss of 1,250 to 1,350 jobs. The move is part of a major restructuring of Iveco's French operations which are expected to report a loss of about FF 340m (\$29.5m) for 1983, against earlier forecasts of FF 250m. It comes at a time of continuing recession in both the French and European truck markets. Renault Vehicules Industriels (RUI), the large truck subsidiary of the State-owned Renault group, last week reported a FF 1.9bn loss for last year. Iveco intends to maintain its French engine manufacturing operations, although it has warned that it might be forced to make more workers redundant because a French government order for 500 Renault-type buses, built at its Fourchambault plant, has fallen through. Fiat is also continuing to make fresh investments in France. Its agricultural equipment subsidiary announced last Friday it is paying FF 75m for Braud, the French company which is the leading European manufacturer of grape harvesting machinery. Iveco's plant at Trappes was built in 1973 at a time of strong expectation of growth in the truck market. It has an annual capacity of 22,000 lorries, but produced only 6,112 last year. The company felt it had no alternative to closure because of the slump in the market and the generally bleak longer term outlook. Up to now it has been the second largest lorry maker in France after RVI. Trappes produced medium-sized vehicles in the 10-16 tonnes range for Europe. A price discount war in France has plagued the main producers for the past 12 months and has cost Iveco dearly. The company expects its French truck operation to lose even more money this year, reflecting the costs of the restructuring. Iveco's is the latest in a series of large industrial restructurings in troubled sectors of French industry. Michelin, the French tyre maker, last Friday announced plans to cut 6,000 jobs by the end of next year. RVI wants to reduce its workforce by 3,750, while Citroen is seeking 6,000 job cuts. The list is further inflated with the restructurings at Dunlop's French tyre operations due to be taken over by Sumitomo of Japan, and Renault's job reduction plans for its big car division, not to mention the French steel and coal industries.

**Bank says Belgian industry needs help**

By Paul Cheswright in Brussels

THE DEVELOPMENT of Belgian industry to take advantage of the third industrial revolution may be impossible to achieve, without help, according to Kredietbank. The industrial bank is the largest financial institution in Flanders, the Dutch-speaking part of Belgium. The comment was made in its latest analysis of economic trends in the country that highlights the structural weakness of Belgian exports. The economy is more than 40 per cent dependent on exports. Kredietbank's suggested solution—its version of the help required—runs down two paths. The first is financial. High corporate profitability is essential: if stronger companies are to modernise and specialise. Measures to maintain and promote competitiveness will be needed over the coming years. This line of thinking supports government policy which, since 1982, has been aimed at shifting resources from personal consumption into the corporate sector, the latest manifestation of this has been an austerity package designed to trim the public sector deficit. The package has already provoked industrial unrest and is the subject of a new round of talks today between the Government and the main trade union groupings. The second path which Kredietbank suggests should be followed is designed to help the weaker part of the corporate sector, where, it says, "involvement in the third industrial revolution is too sluggish and too patchy." The impetus will have to come in the form of further foreign investment in the advanced metalworking industries of Belgium. "Enough is at stake to approach some of the better foreign enterprises, offering them a package of serious fiscal and administrative incentives and getting them to bring the quality of the whole of Belgian industry up to scratch," Kredietbank proposes. It notes that exports have remained the only engine of growth for the economy. Since 1982, the trade position has improved, helped by a devaluation in that year. In the first nine months of last year, the Belgo-Luxembourg Economic Union's trade deficit narrowed to FF 4.7bn (\$61m) from FF 7.2bn (\$93m) for the same period of 1982. What worries the bank, however, is the nature of the exports. The metalworking sector failed to make a positive contribution to the trade balance; mechanical engineering has failed to gain advantages from modernisation. Yet metalworking and heavily subsidised steel imports account for more than 20 per cent of goods exports, Kredietbank says. But there has been an expansion in the exports of cars—Belgium has large assembly plants—furniture, rubber and plastic products, food and beverages and carpets. Here, the trend has been towards increasing specialisation.

**IMF 'at limit' of ability to aid Third World**

BY PETER MONTAGNON IN AMSTERDAM

THE International Monetary Fund has reached "the limits of its possibilities" in providing credits to developing countries, Mr Wim Duisenberg, governor of the Dutch central bank, said here yesterday. In a speech to commercial bankers attending the annual meeting of the Asian Development Bank, he warned that efforts to make the IMF accept an ever-increasing share of the burden of financing the deficits of debtor countries would be counter-productive. They could even threaten its efficient functioning. The IMF had already suffered a "serious deterioration" in its liquidity position through the provision of large balance-of-payments loans since the decision in 1980 to triple members' access to its resources, he said. Last year's increase in quota subscriptions had "restored the IMF's liquidity position somewhat," but in future a more normal limit would have to be placed on members' access to loans until a further quota increase could be agreed. Member countries can borrow a maximum of 155 per cent of their quota subscription from the IMF each year. Borrowing by the Fund to increase its resources available for lending was only an interim measure, Mr Duisenberg said. Loans had been granted to the IMF by its richer member countries only on the basis that their claims on the fund remained short-term and liquid. "I must warn against too great expectations of what the national monetary authorities and the international financial organisations can do," he said. "They should not attempt to take over the role of private creditors in the financial system."

Separately, Mr Willy de Clercq, the Belgian Finance Minister, said that the IMF would have to persuade commercial banks to continue lending "through the full exercise of its powers of moral suasion." "A feasible adjustment path exists, provided that bank lending continues to expand at a rate of 5 per cent per annum until the end of the decade," said Mr de Clercq, who is also chairman of the IMF's Interim Committee. The provision of new finance is essential to maintaining developing countries' willingness to repay their debts.

even Rotterdam. The decay of the port—said to be the only one in the world where dockers stop work when it rains—is a significant cause of the depression that has hit the rest of the city in recent years. The new chairman appears determined to return control to the port authority, after 15 years in which it slipped gradually into union hands. His decision to freeze charges was strongly contested by the unions, and the strike is widely

seen as an attempt to block Sig d'Alessandro's plans to restructure the port. In the van of the fight is the Communist oriented CGIL union. Its leaders in Genoa have accused Sig d'Alessandro of taking decisions instead of seeking compromise. The CGIL is backed in the strike by the pro-Socialist UIL, despite condemnation of the action by that union's leadership in Rome.

**Andreotti sees Chernenko in Moscow**

By Anthony Robinson

THE SOVIET President, Mr Konstantin Chernenko, yesterday warned Sig Giulio Andreotti, the visiting Italian Foreign Minister, that the deployment of U.S. cruise missiles in Sicily increased the risk of nuclear war. He described the missiles as "first strike weapons" whose employment "seriously aggravated the war threat."

**Fight for control paralyses port of Genoa**

BY JAMES BUXTON IN ROME

THE PORT of Genoa, Italy's largest, was still paralysed yesterday by dockers striking against the port management's attempt to regain control from the unions. The strike began last Friday, ostensibly over objections to 104 workers to their treatment in a new grading and promotion system. But it became clear in comments at the weekend that the real issue is Sig Roberto d'Alessandro, the new government-nominated port chairman.

Sig d'Alessandro, a businessman and the Socialist mayor of nearby Portofino, took over a few weeks ago with the job of reversing the port's falling traffic and mounting losses. The decline is due to highly restrictive labour practices, constantly mounting charges and a failure to invest in container handling equipment. As a result Genoa has lost out to Savona and La Spezia, while the city's importers bring in goods from Marseilles and

even Rotterdam. The decay of the port—said to be the only one in the world where dockers stop work when it rains—is a significant cause of the depression that has hit the rest of the city in recent years. The new chairman appears determined to return control to the port authority, after 15 years in which it slipped gradually into union hands. His decision to freeze charges was strongly contested by the unions, and the strike is widely

seen as an attempt to block Sig d'Alessandro's plans to restructure the port. In the van of the fight is the Communist oriented CGIL union. Its leaders in Genoa have accused Sig d'Alessandro of taking decisions instead of seeking compromise. The CGIL is backed in the strike by the pro-Socialist UIL, despite condemnation of the action by that union's leadership in Rome.

**East Germany clamps down on emigrants**

BY LESLIE COLT IN EAST BERLIN

EAST GERMANY has taken into custody dozens of its citizens who recently applied to leave the country for West Germany. The detained East Germans face charges of "treasonable disloyalty" for having sought help from the West German Permanent Mission in East Berlin or from relatives in West Germany. At least 50 East Germans were detained in Jena along with others in several East German cities, including East

Berlin, in an apparent move to discourage further emigration applications. Herr Wolf Quassdorf, an East Berlin theologian, was sentenced last week to 14 months in prison for "illegal contacts" with the West German Mission after he applied to emigrate. More than 20,000 East Germans have arrived in West Germany since January when East Germany began approving exit applications at the fastest rate since the Berlin Wall was built in August, 1961.

An estimated 400,000 East Germans have applied to leave, but in recent weeks there has been a wave of new applications because of growing fears that the East German authorities will soon clamp down on departures. The East German authorities have simultaneously stepped up their efforts to get members of the independent peace movement to apply to leave the country. Several campaigners were given prison sentences recently for holding silent vigils

in East German cities. The East German Government is thought to be permitting some of its dissatisfied citizens to leave in order to reduce pressure on it for political and economic change. In addition, some of the emigrants worked in fields such as teaching where there is now excess manpower. West Germany is compensating East Germany monetarily for the higher education and job training each emigrant has received in East Germany.

**Air traffic controllers step up action against new Bill**

BY DAVID HOUSEGO IN PARIS

FRENCH AIR traffic controllers yesterday intensified their five-day strike delaying flights throughout much of France. The stepping-up of their campaign came on the eve of the presentation in the National Assembly of a government Bill that would lift the 20-year-old ban on strike action by traffic control staff. In spite of the ban, air controllers have regularly come out on strike for better pay and conditions. The controllers' objection to the Bill which M Charles Fiterman, the Minister of Transport, will present is that it imposes a minimum work load during a

strike period that would, on the controllers' reckoning, guarantee 70 per cent of normal flights. The Government says that only 10 per cent of flights would be maintained. This minimum service in the Government's eyes is needed primarily for defence reasons and to safeguard international flights over French territory. Yesterday's stoppages caused two-hour delays at the two Paris airports of Orly and Roissy, as well as at other provincial airports. International flights overlying French territory were also affected.

**Stable outlook for EMS**

BY OUR BRUSSELS STAFF

System, which holds EEC currencies except sterling within a specified parity band should have a period of stability this year, the European Commission said yesterday in its latest review of monetary policy. It warned, however, that there could be strains because of "the international monetary environment"—presumably a reference to likely fluctuations in the dollar. Although the respective inflation rates of EEC countries still diverge, the Commission thinks that the trend in economic fundamentals is favourable towards stability in the sixth year of the EMS existence. Cost and price pressures, resulting from the different

levels, of performance in the EEC economies, most obvious in 1981 and 1982, have diminished, the Commission said. Current account positions have been brought more closely into line with each other. The trend should continue this year, reducing pressures on the foreign exchange markets. In fact, the EMS has had a relatively calm period since March 1983, the Commission observed—this, despite the tensions during the winter when the dollar fell back and the Deutsche Mark moved upwards. This greater stability, it said, "is due to greater economic policy convergence and to an increasing trend towards reestablishment of external equilibria."

**"Northern Ireland's skills and dependability are vital ingredients for our competitive edge."**

Norman Mischler, Chairman, Hoechst U.K.

**Fact 1**  
On the banks of a German river, over 100 years ago, four enterprising young men started a business. Beside the river Main they founded a small dyestuffs factory which has now grown into one of the world's leading chemical companies. That company's name is Hoechst.

**Fact 2**  
Today Hoechst markets a huge range of products including dyestuffs, pharmaceuticals, plastics and veterinary products. But perhaps one of its best known names is Trevira®. Trevira® polyester fibre and yarns are well known for their uses in clothing, home textiles and industrial textiles. Trevira® yarn and technical monofilament yarns are produced in Northern Ireland, where Hoechst relies upon the skill and efficiency of its workforce to maintain competitiveness in today's man-made fibre markets.

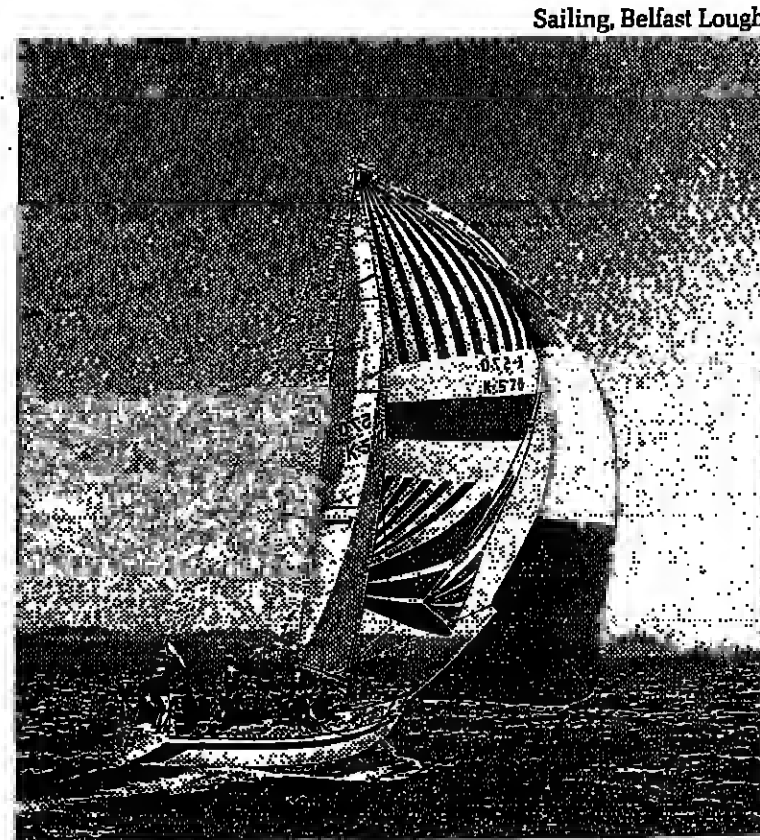
**Fact 3**  
A technically gifted workforce and a unique relationship between unions and management results in consistently good industrial relations and productivity. For example, in 1982, an average of less than one hour per man per year was lost due to industrial disputes of any kind.

**Fact 4**  
We have an efficient infrastructure; our ports, airports, roads, telephone and telex are geared to modern business needs. Their consistent reliability makes first class delivery performance possible for every company operating in Northern Ireland.

**Fact 5**  
For a company looking to both short-term and long-term profits, our financial package is irresistible. Your fixed capital costs can be reduced by up to 90% and many companies pay no Corporation Tax.

**Fact 6**  
Sailing in Northern Ireland's coastal waters is only one of many leisure activities enjoyed by foreign executives and their families. In fact sailing is an extremely competitive sport in Northern Ireland with regular racing and even flotilla cruising to nearby Scotland, Isle of Man, England and Wales. Often executives and their families like the lifestyle so much that they are reluctant to return home even to accept promotion.

**Fact 7**  
Our researchers tell us you may not believe these facts at first! So why not accept this challenge from companies which have already committed themselves to investment in Northern Ireland — "Visit us and we'll show you the facts". To arrange a visit to a successful company in Northern Ireland call or write to John Hughes at the address below.



**In Mayfair**

The May Fair Hotel was opened in 1927 by George V. Over half a century later it is still a hotel fit for a King. Recently refurbished to recapture its former glory and to provide the most modern levels of comfort, the May Fair is without doubt one of the most individual 5-star luxury hotels in London. The reception's marble staircase and glittering chandeliers set the elegant scene, while each guest room is furnished to the highest Inter-Continental standards. Superb French cuisine can be savoured in the classical setting of the Chateaubriant, or there is the Coffee House which offers a less formal style of eating. And the May Fair Bar with its wealth of panelling, has a uniquely English atmosphere. All within a stone's throw of Berkeley Square, Bond Street and Piccadilly, and five minutes walk from the arc.

**THE MAY FAIR HOTEL LONDON**  
THE ADVANTAGE IS INTER-CONTINENTAL

THE MAY FAIR: 110, 112, 114, 116, 118, 120, 122, 124, 126, 128, 130, 132, 134, 136, 138, 140, 142, 144, 146, 148, 150, 152, 154, 156, 158, 160, 162, 164, 166, 168, 170, 172, 174, 176, 178, 180, 182, 184, 186, 188, 190, 192, 194, 196, 198, 200, 202, 204, 206, 208, 210, 212, 214, 216, 218, 220, 222, 224, 226, 228, 230, 232, 234, 236, 238, 240, 242, 244, 246, 248, 250, 252, 254, 256, 258, 260, 262, 264, 266, 268, 270, 272, 274, 276, 278, 280, 282, 284, 286, 288, 290, 292, 294, 296, 298, 300, 302, 304, 306, 308, 310, 312, 314, 316, 318, 320, 322, 324, 326, 328, 330, 332, 334, 336, 338, 340, 342, 344, 346, 348, 350, 352, 354, 356, 358, 360, 362, 364, 366, 368, 370, 372, 374, 376, 378, 380, 382, 384, 386, 388, 390, 392, 394, 396, 398, 400, 402, 404, 406, 408, 410, 412, 414, 416, 418, 420, 422, 424, 426, 428, 430, 432, 434, 436, 438, 440, 442, 444, 446, 448, 450, 452, 454, 456, 458, 460, 462, 464, 466, 468, 470, 472, 474, 476, 478, 480, 482, 484, 486, 488, 490, 492, 494, 496, 498, 500, 502, 504, 506, 508, 510, 512, 514, 516, 518, 520, 522, 524, 526, 528, 530, 532, 534, 536, 538, 540, 542, 544, 546, 548, 550, 552, 554, 556, 558, 560, 562, 564, 566, 568, 570, 572, 574, 576, 578, 580, 582, 584, 586, 588, 590, 592, 594, 596, 598, 600, 602, 604, 606, 608, 610, 612, 614, 616, 618, 620, 622, 624, 626, 628, 630, 632, 634, 636, 638, 640, 642, 644, 646, 648, 650, 652, 654, 656, 658, 660, 662, 664, 666, 668, 670, 672, 674, 676, 678, 680, 682, 684, 686, 688, 690, 692, 694, 696, 698, 700, 702, 704, 706, 708, 710, 712, 714, 716, 718, 720, 722, 724, 726, 728, 730, 732, 734, 736, 738, 740, 742, 744, 746, 748, 750, 752, 754, 756, 758, 760, 762, 764, 766, 768, 770, 772, 774, 776, 778, 780, 782, 784, 786, 788, 790, 792, 794, 796, 798, 800, 802, 804, 806, 808, 810, 812, 814, 816, 818, 820, 822, 824, 826, 828, 830, 832, 834, 836, 838, 840, 842, 844, 846, 848, 850, 852, 854, 856, 858, 860, 862, 864, 866, 868, 870, 872, 874, 876, 878, 880, 882, 884, 886, 888, 890, 892, 894, 896, 898, 900, 902, 904, 906, 908, 910, 912, 914, 916, 918, 920, 922, 924, 926, 928, 930, 932, 934, 936, 938, 940, 942, 944, 946, 948, 950, 952, 954, 956, 958, 960, 962, 964, 966, 968, 970, 972, 974, 976, 978, 980, 982, 984, 986, 988, 990, 992, 994, 996, 998, 1000.

**Northern Ireland**  
Judge us on the facts

Industrial Development Board for Northern Ireland · Ulster Office · 11 Berkeley Street · London · W1X 6BU · Telephone (01) 493 0601 · Telex 21839



WORLD TRADE NEWS

Occidental to sign \$600m coal mine pact with China

BY CHRISTIAN TYLER, TRADE EDITOR
OCCIDENTAL PETROLEUM of the U.S. said it will on Sunday formally sign a \$600m joint venture agreement with China to develop what will reputedly be the world's largest open-cast coal mine.

Japan gives AT & T \$49m minicomputer contract

TOKYO—Nippon Telegraph and Telephone Public Corporation (NTT) has signed contracts worth \$51m (\$36.4m) to buy U.S.-manufactured touch-tone telephones and super-minicomputers to be used for Japan's telephone traffic observation system.

Australia seeks U.S. meat quota injunction

SYDNEY — The Australian Government has filed for an injunction against U.S. meat import restrictions which it says kept Australian exporters from shipping \$18.5m (£13.1m) worth of meat to the U.S. in 1983.

Jakarta to buy second Hughes Corp. satellite

INDONESIA says it will sign a contract with Hughes Corporation of the U.S. on May 1 for a new telecommunications satellite to replace the Palapa B2 lost soon after launch from a Challenger space mission in early February.

AT & T data link-up

Japan's overseas telecommunications monopoly, Kokusai Denhin Denwar Co (KDD), plans soon to start a U.S.-Japan data communication service with a subsidiary of American Telephone and Telegraph Co (AT & T), it is said yesterday.

How India copes with copyright pirates

PAPERBACK editions of two popular novels—Harold Robbins' Xanadu and Jeffrey Archer's First Among Equals—are to be printed and published in India in advance of publication of either hardback or paperback editions in the UK.

Singapore and Taiwan have taken legal action against book pirates but the unauthorised copy and distribution of books throughout Asia remains a serious problem.

John Elliott in New Delhi examines how the battle is being waged in India

UK publishers have co-operated with Rupa and with other companies such as India Book House, which is publishing Xanadu and First Among Equals.

By sending proofs or negatives or early hardback copies to be photographed and printed in India, they often succeeded in beating the pirates by getting the books on to the Indian market before they can be copied.

Babcock in boiler venture for N. American market

BY DAVID FISLOCK, SCIENCE EDITOR
A JOINT venture between Babcock Power, boilermaking subsidiary of Babcock International, and Stone and Webster, the U.S. engineering group, to exploit the North American market for a novel type of fluidised combustion boiler, has been agreed between the two companies in London.

Alsace steps up efforts to win U.S. investment

BY DAVID MARSH, recently in Strasbourg
THE Alsace region of Eastern France is stepping up efforts to attract U.S. investment at a time when Alsatian business leaders fear local jobs could suffer from preferential industrial aid being accorded to troubled steel centres in neighbouring Lorraine.

West Germany hopes for Seoul submarines order

BY RUPERT CORNWELL IN BONN
WEST GERMANY is hoping to extend its inroads into the South Korean defence market by winning an order for two submarines, worth an initial DM 400m (£106m) from the Seoul Government.

HIGH TECHNOLOGY



THE CONCORDE. THE MOST RESEARCHED, FASTEST AIRPLANE IN THE SKY, SPEEDING YOU FROM NEW YORK TO PARIS IN A REMARKABLE THREE AND A HALF HOURS.

AIR FRANCE WERE AIMING EVEN HIGHER

Argentine Labour Minister resigns

By Jimmy Burns in Buenos Aires
A SIGNIFICANT U-turn in the Argentine Government's attitude towards the unions appeared to be confirmed yesterday when the long-expected resignation of Sr Antonio Mucci, the controversial Labour Minister.

More American news, Page 9

reform was one of the key issues of his electoral campaign, but Sr Alfonsín has more recently been worried that the controversy generated by the Labour Bill was undermining any chance of securing broad political support for the Government's economic programme.

Reagan set to sign nuclear agreement during China visit

BY REGINALD DALE, U.S. EDITOR IN WASHINGTON
THE U.S. and China have completed negotiations for a nuclear co-operation agreement, which should be ready for signature by President Ronald Reagan during his six-day visit to China that begins on Thursday, U.S. officials said yesterday.

Jackson holds out an olive branch

By Our U.S. Editor in Washington
THE Rev Jesse Jackson, long a supporter of the olive branch in international confrontations, has offered a peace gesture to lead off a potentially damaging election year feud inside the U.S. Democratic Party.

Mini float glass plant technique launched

BY TERRY DODSWORTH IN NEW YORK
A NEW technique of making float glass in mini-sized plants ideal for third world markets is being launched by AFG, a rapidly-expanding U.S. company based in Tennessee.





A still from 'Chinabai' at Fair by courtesy of 20th Century Fox. © Enigma Productions Ltd 1981. Goldenstar - a part of Pearson - provided the development finance.

## PEARSON SETTING THE PACE FOR SUCCESS

1983 was a year of major progress for Pearson.  
 We increased our profits.  
 We reduced our borrowings.  
 We streamlined our structure.  
 We strengthened our management.

You can read in our Annual Report about our strategy and the successes we achieved in 1983. To receive your copy, please post the coupon.

To: The Registrar (CAP 3/4) S. Pearson & Son plc, Lloyds Bank, Goring-by-Sea, West Sussex BN12 6DA.  
 Please send me your 1983 Annual Report.

Name \_\_\_\_\_

Address \_\_\_\_\_



PEARSON

P.L. Publishing  
 INFORMATION AND  
 ENTERTAINMENT

Fairey  
 ENGINEERING

Lazard Brothers  
 MERCHANT  
 BANKING

Royal Doulton  
 FINE CHINA

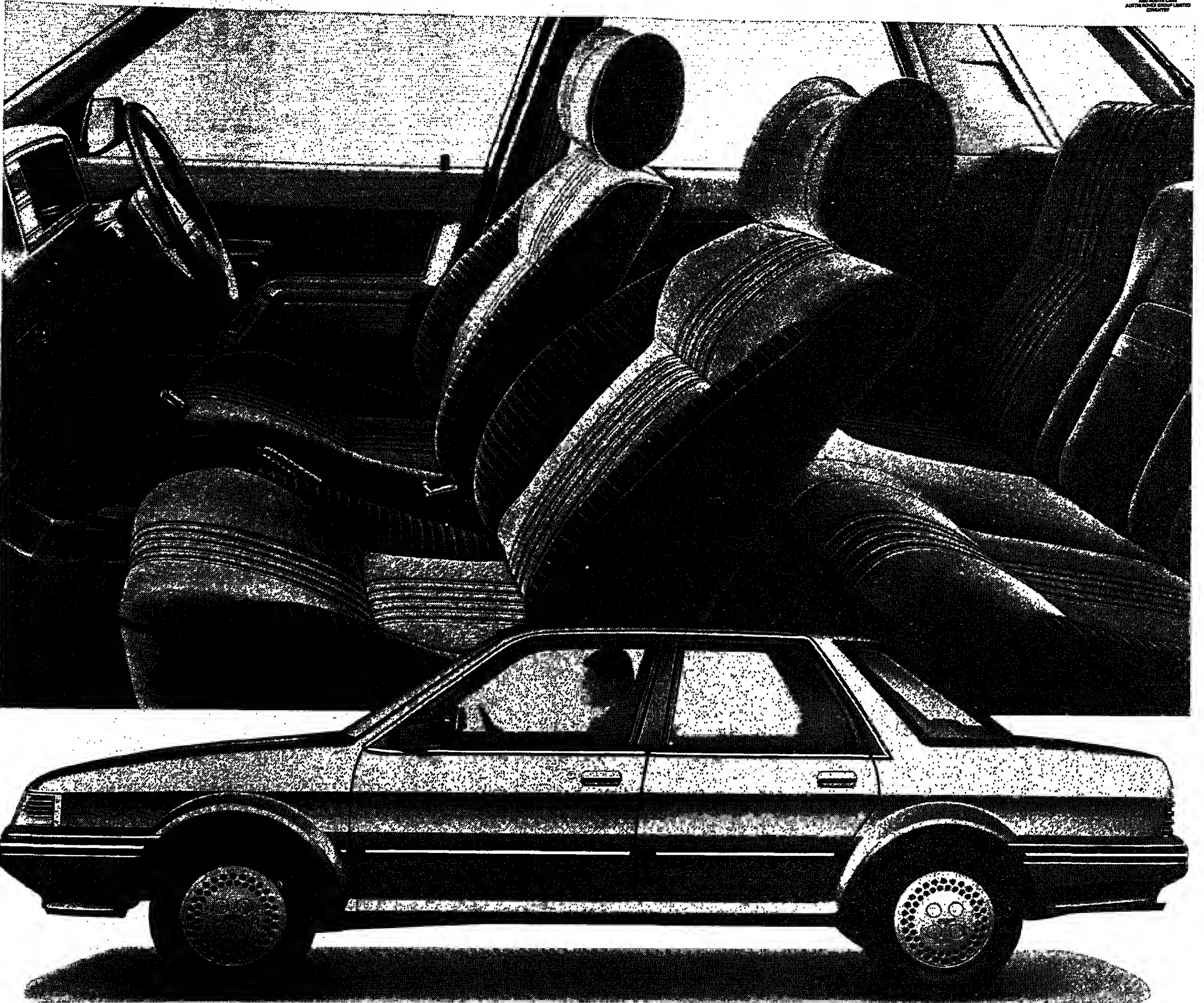
Midhurst  
 OIL AND  
 OIL SERVICES







**AUSTIN ROVER**



You're looking at an inspired creation. The new Austin Montego.

A beautiful car, whose inspiration has been drawn from the needs, wants and aspirations of a very special group of people. Today's drivers.

By listening and talking to those drivers, Austin Rover has delivered the car they asked for. Montego is bigger, better equipped, faster, more economical and more stylish than today's driver is used to.

The Austin Montego: the more you read about it, the more you'll like it. After all, it was designed for you, the driver.

**PASSENGERS TRAVEL FIRST CLASS TOO.**

Passengers experiencing the Montego will find their every wish fulfilled.

Generous fitted carpet is complemented by ducted heating for rear seat passengers. The deeply upholstered front seats recline, and are fitted with head restraints as standard.

In the rear of the Montego HL the folding centre armrest and integral rear seat head restraints put comfort first.

Austin's much imitated split rear seat

action takes on a new role in Montego. When folded, the seat backs offer the choice of a picnic tray, or a large writing surface, as well as increasing Montego's outstanding loadspace.\*

**PUTTING ECONOMY AND PERFORMANCE EQUAL FIRST.**

Austin Rover's new technology is shown to powerful effect in Montego's combined economy and performance.

The Montego 1.3, with the optional five-speed transmission, is capable of a staggering 58.3 mpg at 56 mph. Taking the 1.6L as an example, a top speed of 102 mph\* comes as easily as an incredible 53.3 mpg at a steady 56 mph.

The same is true of the 2.0 HL, propelling the driver from 0-60 mph in 9.8 seconds\* and yet still delivering over 50 mpg at 56 mph.

Part of this achievement is due to Austin Rover's proven Electronic Engine Management system. A microprocessor controls fuel usage through a highly sophisticated automatic choke system, idle speed control and deceleration fuel

cut-off. On 1.6 and 2.0 litre models, new programmed ignition brings state of the art performance to Austin's advanced engine range.

Montego's beautiful shape plays an important part in performance and economy. The flush fitting front and rear screens, and integrated body-colour bumpers help aid aerodynamic efficiency, whilst adding further style.

Today's driver wants better visibility, more interior space, more legroom and more loadspace.

The Austin Montego satisfies all four requirements within an elegant shape.

**TD WHEELS AND TYRES. ANOTHER FIRST FOR MONTEGO.**

The Montego is one of the first production four door saloons to be fitted with a new concept in wheel and tyre technology. Special rims are fitted with low profile TD tyres, designed to remain in position even after a sudden loss of pressure.

And on the road, the TD combination, front wheel drive and Montego's advanced suspension system give a qual-

ity of ride, handling and control unsurpassed in its class.

Montego offers a range of power units from 1.3 to 2.0 litre, including an all-new low weight 1.6 litre engine. All are equipped to cover 12,000 miles between services.\* Optional 5-speed transmission becomes standard on L models upwards; automatic is available on 1.6 litre models.

**SOME PUT LUXURY FIRST. OTHERS WANT PERFORMANCE.**

The prestigious Vanden Plas heads the Montego range in luxury, while the 2 litre electronic fuel injection MG EFI delivers the ultimate in performance and handling.

Every Montego comes with the benefits of Austin Rover's free 6 year corrosion warranty and first year full warranty, extendable for the second and third years.

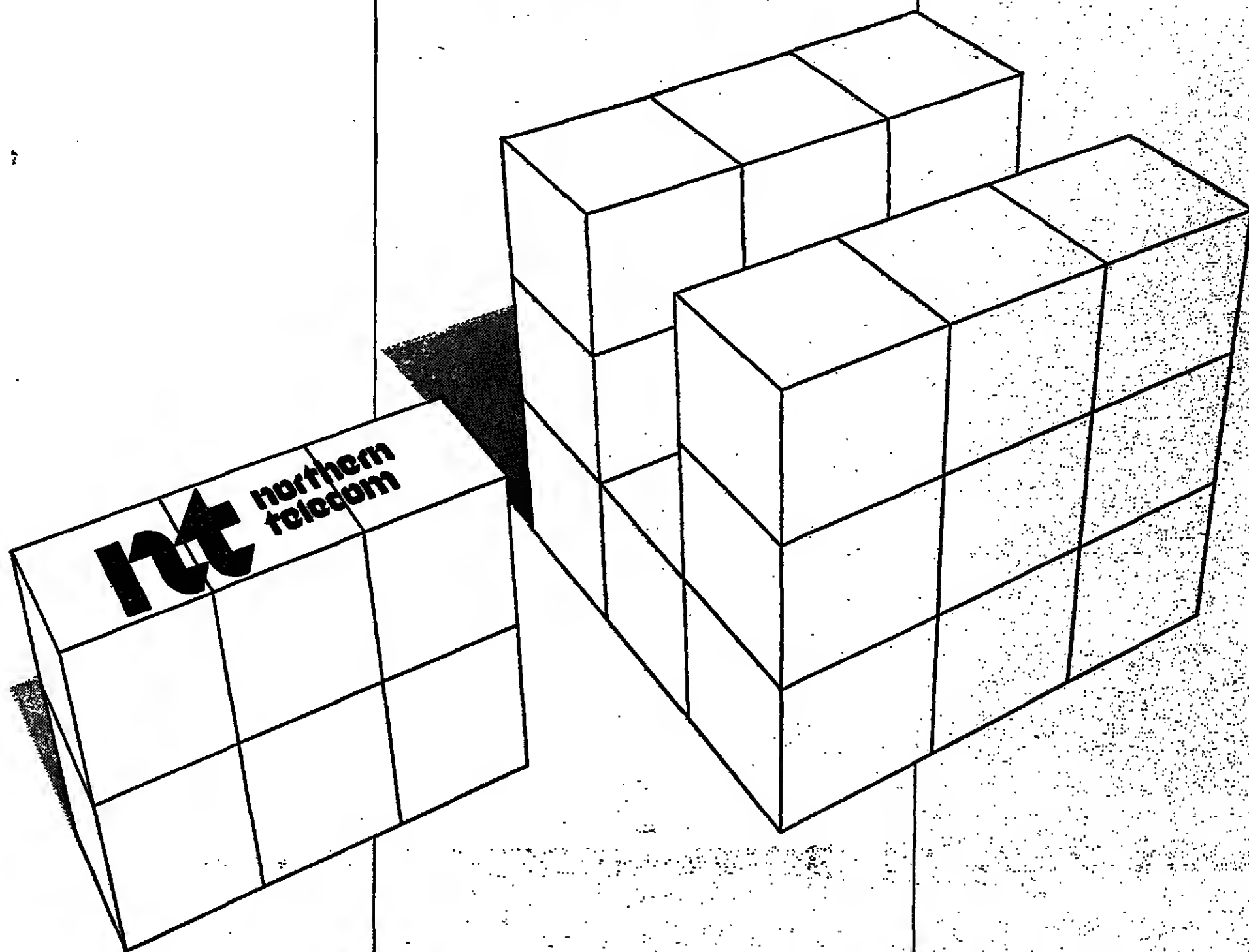
Test drive one of the Montego range at your Austin Rover dealer. You'll see why it's the car that puts the driver first.

**AUSTIN MONTEGO**  
FROM £5,282.  
DRIVING IS BELIEVING.

\* HL models upwards. \* Manufacturer's data. \* Or one full year, whichever comes first. DOT figs Montego 1.3 5 speed: Simulated Urban Cycle 36.3 mpg/78 L per 100 km, Constant 56 mph 58.3 mpg/4.8 L per 100 km, Constant 75 mph 41.5 mpg/6.8 L per 100 km, 2.0 HL: Simulated Urban Cycle 30.8 mpg/92 L per 100 km, Constant 56 mph 50.3 mpg/5.6 L per 100 km, Constant 75 mph 37.3 mpg/7.6 L per 100 km, 1.6L: Simulated Urban Cycle 31.9 mpg/8.9 L per 100 km, Constant 56 mph 53.3 mpg/5.3 L per 100 km, Constant 75 mph 38.8 mpg/7.3 L per 100 km. Price quoted is for Montego 1.3 4 speed. Model shown 2.0 HLS at £7,585, excluding number plates and delivery, correct at time of going to press. Metallic paint optional at extra cost.



# NORTHERN TELECOM. BUILDING THE TELECOMMUNICATIONS FUTURE.



In 1976, Northern Telecom announced the Digital World\*, changing the course of world telecommunications development. It committed the company to being the first to produce a complete family of fully digital switching and transmission systems.

Digital World made obsolete the analogue telecommunications equipment being produced by other manufacturers. In time, and in turn, they followed the Northern Telecom lead. And, they are still following.

Digital World revolutionized the concepts and practices of communications and information management and accelerated the merging of the telecommunications, computer, and data-processing industries. It made possible the future of effective information-management.

#### WORLD LEADERSHIP IN DIGITAL TECHNOLOGY

Northern Telecom today is the world's largest manufacturer of fully digital systems and services. It has in service, or on order, the equivalent of some 16 million lines of fully digital switching and transmission systems—more than any other company. Northern Telecom is a leader in the development and manufacture of computers and custom large-scale integrated circuits for telecommunications.

It has one of the most proven records in the development of successful and innovative telecommunications software.

#### UNMATCHED GLOBAL SUCCESS

In the United States, the world's largest and most competitive national market, Northern Telecom's DMS\* (Digital Multiplex Systems) Family of digital

central office switches has been sold to, or is in service with, 21 of the 22 U.S. Bell operating companies and all other major telephone companies.

Northern Telecom is the largest supplier of digital telecommunications systems to the U.S. military. It is a principal source of such equipment for the U.S. specialized and resale common carriers, governments, private corporations, and major institutions, such as universities and hospitals.

It was the first telecommunications equipment manufacturer to introduce integrated voice and data capability with its family of SL\* digital PBXs. The SL Family ranges from 30 lines to 30,000 lines and includes the largest digital PBX available. The SL-1 is in use in 45 countries.

Financial and telecommunications organisations around the world are using the Northern Telecom SL-10 data packet switch. The U.S. Federal Reserve System handles fund transfers of more than US\$100 trillion a year on its 14-node SL-10 system. SL-10 is used by the West German Bundespost, and in the United Kingdom, Canada, the U.S., Hong Kong, Switzerland, Portugal, Belgium, Austria, and the Republic of Ireland.

In the data-processing field, Northern Telecom systems are in use in North America and throughout Europe. More than 3,500 systems, worth £45 million, have been exported from England to Europe during the last 5 years. The Displayphone\* terminal was the world's first combination telephone and computer terminal.

#### COMMITMENT TO RESEARCH AND DEVELOPMENT

Northern Telecom's technological and market leadership is based on a long-term commitment to

market-driven research and development, which has already produced a decade of telecommunications firsts. Northern Telecom is presently investing nearly 10 percent of total worldwide revenues in R&D each year.

A major portion of future R&D expenditures will be devoted to products and systems for the OPEN World\* programme announced in 1982. An acronym for Open Protocol Enhanced Networks, OPEN World is the company's mandate to bring order out of information-management chaos.

As one element of the OPEN World, Northern Telecom is making available to other manufacturers of data-processing and computing equipment the proprietary protocols to its switching systems. This will permit a great variety of information management equipment and products to work together in a single system.

Northern Telecom's 39,000 employees are based throughout the world in sales and services offices, 37 research and development centres, and 46 manufacturing plants.

With them, and through them, Northern Telecom continues to lead the industry and build the global telecommunications systems of the future.

For more information on Northern Telecom and its products contact: Northern Telecom plc, Berkeley Square House, Berkeley Square, London W1X 5LE. Telephone: 01-491 4599.

**nt northern telecom**

\*Trademark of Northern Telecom Limited

**THE LARGEST SUPPLIER OF FULLY DIGITAL SYSTEMS IN THE WORLD.**



# OVERSEAS NEWS

## Hong Kong markets fall but react with relative calm

By Robert Cottrell in Hong Kong

HONG KONG'S financial markets were relatively calm yesterday, their first trading day since Friday's announcement that Britain will cease administering the Colony in 1997, when the UK's lease from China of most of the territory expires.

The stock market's Hang Seng index dropped sharply in the morning, but trading was thin with most institutions staying out of the market. In the afternoon, a mild recovery saw the index close at 1,070.02, down 45.83 points on the day but almost 9 points off its lunchtime low.

The Hong Kong dollar stayed close to its nominal peg of \$7.80 to the U.S. dollar. It was trading yesterday afternoon at \$7.81, just a half-cent weaker on the day.

While the stock market's fall represents the wiping off of 4 per cent from share values, Hong Kong investors reacted considerably more sharply in the past two years to considerably less momentous news.

The announcement that Britain would cease administering Hong Kong was made by Sir Geoffrey Howe, the British Foreign Secretary, on Friday morning, the first day of the Easter holiday weekend. Officials believe this weekend "buffer" helped steady the market's nerves.

Most analysts said that Sir Geoffrey's statement was predictable and widely discounted. Communist commentators praised the Foreign Secretary's "realism."

## Inquiry plea after Kenya 'massacre'

NAIROBI—A leader of the Degodia tribe appealed yesterday for an international commission to probe allegations that Kenyan security forces killed an estimated 900 Degodia tribes people last February.

Mr A. S. Khalif, a former member of parliament from the district of Wajir West in north-eastern Kenya, near the Somali border, made the appeal in a statement distributed to journalists in Nairobi.

Mr Khalif urged that an international commission be set up: "To probe the Wagala holocaust in order that the truth about Wagala shall be established." Wagala, about nine miles from the remote trading centre of Wajir, was the scene of the alleged massacre.

The Kenya Government has denied charges by leaders of the Degodia, a small tribe of ethnic Somalis, that up to 900 tribes people were killed around Wagala when security forces were sent to quell fighting between the Degodia and Afuran tribes over grazing and water rights in February. Mr Justus Ole Tups, Minister of State in the office of President Daniel Arap Moi, issued a detailed rebuttal of the charges in parliament on April 22.

Mr Tups asserted that only 57 people were killed in the security forces action.

## Police backing for Malay party meeting

By Wong Sulong in Kuala Lumpur

THE month-long crisis within Malaysia's largest Chinese political party, the Malaysian Chinese Association, is moving towards a showdown following police approval for a party's extraordinary general meeting to be held on Sunday.

The police approval is of crucial importance to the dissident group trying to topple the present party leadership, as it indicates that the Malay leaders are remaining neutral in the association's power struggle.

In another development on Monday, the former association president, Datuk Lee San Choon, publicly threw in his support for the dissident group when he urged all association delegates to attend the meeting.

The crisis started last month when Neo Yee Pau, who took over from Datuk Lee as acting president last May, expelled his rival, Tan Koon Swan and 13 of his supporters for alleged breach of party discipline.

The association has been a partner in the Malaysian government for the past 27 years and has four cabinet ministers, including Neo, who holds the transport portfolio. The crisis has dampened the Malaysian and Singapore stock exchanges.

## Offer of arbitration in Sikh dispute

By K. K. Sharma in New Delhi

THE Indian Home Minister, Mr P. C. Sethi, yesterday offered to refer the river waters dispute in the violence-racked state of Punjab to a tribunal for arbitration but made this contingent on an overall settlement of the Sikh demands.

Mr Sethi made the offer while replying to a debate in the upper house of Parliament. The river waters dispute is one of the main issues over which the Sikhs are agitating and the Government has hesitated so far to make any commitment on it as the interests of adjacent states are involved.

The Government has now made a gesture but it remains to be seen how far this is taken by the Sikhs' Akali Party, as the party is being pressured by the extremists to reject any negotiations with the Government.

Mr Sethi again asked for a negotiated settlement of the Punjab tangle but made it clear that the Government would never accept the demand for Khalistan, the separate Sikh homeland sought by the extremists.

There was trouble again in the north-eastern flank of India when paramilitary forces of Bangladesh and India exchanged fire across the border for the second time in less than a week.

An Indian spokesman said intermittent firing continued all day and that three Indian security men were injured. The firing is said to have been started by Bangladesh rifles personnel to prevent Indian workers from erecting a fence along the border.

The fence is being built all along the Indo-Bangladesh border by India at a cost of \$37m to check illegal immigration into Assam.

## ADB studies Indian loans request

By Peter Montagnon in Amsterdam

INDIA'S application to borrow from the Asian Development Bank is likely to be one of the most important talking points at this year's annual meeting which opens here today, Mr H. Onno Ruding, Dutch Finance Minister, said yesterday.

Mr Ruding, who is to chair the three-day meeting, told a Press conference that although no decisions have yet been taken on the amount and timing of Indian loans, they could be "very important to the bank because of the size of the country."

Coupled with the potential admission of China to membership of the bank, large scale borrowing by India could radically increase the size of its operations. Last year the ADB approved loans of \$1.88bn (\$1.35bn), making it relatively small by regional development bank standards.

India has not borrowed from the bank before but is now seeking finance because of an expected shortfall in loans from other sources, notably the International Development Association (IDA), Mr Ruding said.

## Sadat associates dropped from Mubarak party lists

By Charles Richards in Cairo

PRESIDENT Hosni Mubarak of Egypt has continued the gradual process of change within his National Democratic Party by dropping some of the leading personalities of the Sadat era from the party lists to contest the parliamentary election on May 27.

Mr Mubarak, he personally took charge of vetting the lists in the 48 electoral districts to give younger candidates a chance.

Twenty-five members of the People's Assembly are excluded, including 11 former ministers, most dropped in Cabinet reshuffles earlier during Mr Mubarak's two-and-a-half-year presidency.

They include the former prime minister, Dr Mustapha Khalil, who retains a senior party post, the former speakers of the People's Assembly, Dr Suif Abu Taleb and Sayed Marsi—the latter related by marriage to the Sadat family—a former deputy prime minister, Fikri Makram Obeld, and the unpopular former interior minister, Nabawi Ismail.

It is not clear how many, like the promising former Information Minister Mansour Hassan, chose not to stand and how many were weeded out by the president.

The Minister for Parliamentary Affairs, Muhammad Rashwan, does not appear in the lists. He has been seen by the opposition as being against the extension of democratic freedoms in Egypt.

To counter this clearing process, a number of senior personalities closely associated with the late president and his

policies, including the Prime Minister, Dr Fuwad Moheiddin, and the multi-millionaire businessman Osman Ahmed (Osman), are prominent on the lists.

All the five parties contesting the elections had 10 days in which to declare their lists, but waited until the last minute before doing so.

Under Egypt's new electoral system, a modified form of proportional representation, prospective candidates have to belong to a party.

The NDF lists do include a number of ministers for the first time. Under the Egyptian system of government, ministers may be appointed from outside parliament although they are answerable to it, and many are contesting the elections for the first time.

## Iraq minister visits Moscow

By Richard Johns

A RESCHEDULING of payments for Iraq's weapons purchases from the Soviet Union is believed to be the main purpose of a visit to Moscow by Mr Taha Yassin Ramadan, First Deputy Prime Minister.

On his departure from Baghdad yesterday Mr Ramadan was quoted by the official Iraqi news agency as saying the visit was aimed at improving and expanding bilateral relations.

Iraq has received substantial deliveries of arms including T-72 tanks and Skud B ground-to-ground missiles as a result of the rapprochement begun at the end of 1982 and consolidated last November by the visit to Moscow of Mr Tareq Aziz, Iraq's Foreign Minister.

## Quarrel splinters Beirut peace

By Nora Boustany in Beirut

A MULTI-FUNCTIONAL security committee met yesterday in a bid to resolve a quarrel over the boundaries of deployment of a 1,500-man buffer force policing neutral zones between combatants.

A dispute over who should remain in the Primo-Sodeco axis straddling the demarcation line separating East and West Beirut led to artillery and rocket propelled grenade exchanges on Easter Monday, killing one Lebanese gendarme.

The violence killed three other people and wounded many others. The Christian militias of the Lebanese forces and Lebanese Army regulars fighting on the eastern side of the mid-city Green Line refused to vacate their Primo-Sodeco after they had agreed to do so.

## Call for inquiry into killings

By Tel Aviv - Israeli newspapers

TEL AVIV - Israeli newspapers, joined by two opposition politicians, renewed their demands yesterday that authorities reveal how two Palestinian bus hijackers were killed earlier this month.

Official reports of the commando operation on April 13 that freed more than two dozen hostages aboard an inter-city bus say two of the terrorists were killed immediately when the bus was stormed while the two others were wounded and died later.

But photographers on the scene took pictures of at least one handcuffed man, who did not appear injured, being led away from the bus after it was stormed.

Journalists later showed one of the photographs in the Gaza Strip to friends and family of one of the hijackers, who identified him as

# AMERICAN NEWS

## Six killed as food riots strike Santo Domingo

SIX PEOPLE, one of them a policeman, were killed in Santo Domingo on Monday when security forces fired at rioters looting supermarkets in a protest against rising food prices in the Dominican Republic, police said.

They said the six died as police and troops fired into crowds which had sacked and burned four supermarkets in the capital. Dozens of smaller stores were also looted.

Troops were called in to reinforce police and more than 300 people were arrested, police said. Most shops in the capital and other large cities closed as

## Fresh strike threat by Bolivian trade unions

By Hugh O'Shaughnessy

THE BOLIVIAN COB trade union confederation is threatening to call its members out on a general strike tonight in protest against the austerity measures decreed earlier this month by President Hernan Siles Zuzo. The measures included rises in the prices of staple foods, petrol and transport which range from 110 to 600 per cent.

The strike, which was originally called for Monday, was suspended amid rumours of a military coup. A garrison at Robore in the remote eastern area of Bolivia was reported to have risen against the Government on Monday but the insurgents appear not to have been backed

by any other military units. Meanwhile a consignment of 2,000 French machine pistols is under military guard at the airport at Santa Cruz. The 148 packing cases, labelled "food," were destined for the Bolivian police but General Arnoldo Pinto, head of the fifth division in the city, has demanded that the arms be turned over to the armed forces.

An emergency meeting of the international financial institutions is being called in Washington this month to seek \$200m in emergency financial aid for the Siles Government to tide it over until a formal stand-by arrangement with the Government and the International Monetary Fund can be agreed.

## INTERNATIONAL GUIDE TO THE ARTS

every Friday in the Financial Times

# American Airlines announce the M23 extension.

Brighton

- Gatwick
- Acapulco
- Albuquerque
- Atlanta
- Austin
- Corpus Christi
- Dallas/Fort Worth
- Denver
- Harlingen
- Houston
- Las Vegas
- Little Rock
- Los Angeles
- Lubbock
- Memphis
- Mexico City
- Midland Odessa
- Nashville
- New Orleans
- Oklahoma City
- Orange County
- Phoenix
- Portland
- Reno Tahoe
- Salt Lake City
- San Antonio
- San Diego
- San Francisco
- Seattle
- Tucson

Please turn over

These days there is no faster way to get to anywhere in America's South West.

Proceed any day of the week down the M23 to Gatwick (or get the fast train from Victoria).

Get an American Airlines non-stop flight to Dallas/Fort Worth, filter through our quick and efficient customs and immigration and take any of the 35 convenient connections to anywhere in the South West from Los Angeles to Oklahoma.

If you stopover en route in Dallas/Fort Worth you'll find all of America at your disposal via our unique hub system.

Over 270 flights radiate out of Dallas/Fort Worth daily to more than 70 destinations.

It makes flying easier than catching a bus.

Of course, should you start your journey by taking the M4 to Heathrow you may find yourself in a bit of a jam because although many illustrious airlines fly out of Heathrow to the USA, not one of them flies non-stop to Dallas/Fort Worth.

For further information: contact your travel agent or ring American Airlines on 01-629 8817.

# MONTEGO

Proud addition to a famous fleet family...

More and more fleet owners are finding that only Kenning provide the choice they need and the value they demand. So it's no surprise to find the great new Montego in Kenning's great fleet family! Best of all, with eight Montego models to choose from, you're sure to get a Kenning fleet deal that's never. Talk about it with Gordon White on Freefone Kenning and see for yourself what the Montego has to offer.

Metro, Maestro, Acclaim, Rover... AND MONTEGO, THE CAR THAT PUTS THE DRIVER FIRST.

**KENNING FLEET SALES DIVISION**

Minor Offices, Old Road, Chesterfield S40 3QT. Telephone: 0246 772411

YOU CAN WITH KENNING!





UK NEWS

# Scargill rejects talks on phased pit closures

BY OUR INDUSTRIAL STAFF

MINERS' UNION leaders made clear yesterday that they would not be entering into any talks on a revised timetable for pit closures. In doing so they ruled out hope of an early break in the deadlock in the dispute over pay and pit closures, which is now in its seventh week.

Mr Ian MacGregor, chairman of the National Coal Board (NCB) offered what appeared to be the first signs of concession when he told two mine management unions at a coal industry committee meeting that he was prepared to consider phasing his programme of cuts over a longer period than originally specified. The NCB had demanded 20,000 redundancies and the loss of some 4m tonnes of capacity over 12 months.

Mr Arthur Scargill, president of the National Union of Mineworkers

(NUM) said yesterday, however, that he would not be present at a meeting today of the industry's consultative council when a revised timetable is expected to be discussed.

"The union is not prepared to discuss any reduction in manpower or pit closures. We are interested in expanding the industry, not contracting it," he said.

The union leadership received a setback yesterday in its attempt to intensify strikes in the coalfields. In the Nottinghamshire coalfield, miners at seven pits went to work in spite of their union's national conference decision to call all members out on strike.

There was heavy picketing of pits and police reported some arrests.

A threat to production at the huge Ravenscraig steel works in central Scotland was lifted yesterday when dockers agreed to unload vital supplies of coal on the Clyde from a British-registered ship. At the weekend, dockers supporting the miners refused to unload American coal from a Liberian-registered ship.

Mr Neil Kinnock, the Labour leader, yesterday attacked the Government for its role in the coal dispute and called for a reappraisal of the industry's future, Margaret van Hattepa writes.

Speaking at a by-election rally in Wales, Mr Kinnock accused Mr MacGregor of "negotiation by newspaper." It reports his willingness to slow down the programme of pit closures were justified, they were welcome, he said. But "false hopes, winks and nudges" would only embitter and prolong the dispute by injecting extra distrust.

# Centimetre passes its screen test

By Guy de Joux

ONE OF the last bastions of Britain's measurement system is about to fall. Under pressure from the law, international harmonisation and technological progress, the inch is soon to be replaced by the centimetre as the standard measure of television screen size.

The change, after legal action by UK trading standards authorities, is intended to provide a more accurate description of the diagonal dimensions of television screens. But plans for its introduction are so complicated that some in the industry fear that it will confuse the public.

Televisions will soon be relabelled with measurements in inches and centimetres. While the inch measurement will refer to the overall tube size, the centimetre figure will describe the visible picture, which is usually about 1/4 inches (3.8 cm) smaller.

The dual system is expected to last for some years, but it will not apply to a new generation of television sets due to go on sale in the next 12 months, whose screen sizes will be measured only in centimetres. The new sets, which are expected to cost 10-20 per cent more than existing models, will contain a so-called Flat Squared Tube, which will provide a fuller picture with less glare. It is also said by makers to be more attractive to look at when the television is switched off.

Just to complicate matters further, the Flat Squared Tube will be neither flat nor square. Its screen will still bulge - although by less than an ordinary tube - and will have the same rectangular shape.

It was prompted by two recent developments. First, trading standards officers have cracked down on the industry's practice of giving the size of a television's tube rather than its visible picture area. They say it violates the Trade Descriptions Act. Second, television tube makers have an international agreement to adopt the diagonal visible picture as the standard measurement of screen size.



# Coanda flares win Queen's Award



Kaldair's INDAIR and MARDAIR Flare Package on BP's FORTIES 'C' Platform

The engineering innovation in Kaldair Limited's INDAIR and MARDAIR Coanda flares has been recognised in the 1984 Queen's Awards to Industry for Technological Achievement.

Kaldair has revolutionised gas and liquid hydrocarbon waste disposal in oil and gas production by the development and marketing of these flares.

Millions of pounds have been saved in capital and operating costs, particularly in arduous geographical locations such as the North Sea. If conventional flares had been used in these North Sea installations, the additional design complexities would have resulted in a considerable increase in overall project capital costs.

The flares utilise an aerodynamic phenomenon, the Coanda effect, named after its discoverer, Henri Coanda, to entrain and mix large quantities of air with the waste stream. Burning this mixture is safe, reliable and, above all, very efficient. Therefore, smoke production, common place with conventional flares, is eliminated and the heat radiated by the flame is two or three times lower than produced by conventional flares. Thus, the flares can be safely located much closer to working areas on offshore platforms and huge savings in structural costs are achieved.

Kaldair's flares can be found, both onshore and offshore, worldwide. Installations are found widely in the North Sea; in the USA; in the Indian Ocean, South America, Africa; the Middle East and Australasia.

**Kaldair Limited**  
Astronaut House, Hounslow Road, Feltham, Middlesex, TW14 9AD.  
Tel: 01-751 6191 Telex: 938671

# Observer deal hinges on 100% control

Financial Times Reporter

MR ROBERT MAXWELL, chairman of British Printing & Communications Corporation, said yesterday that he was interested in buying the Observer newspaper only if he could secure 100 per cent ownership. He spelled out his terms to Mr Roland "Tiny" Rowland, head of Lorrho, the Pan-African trading group which owns the Sunday paper, when the two men discussed a possible deal over breakfast at Claridge's, the London hotel.

Mr Maxwell's insistence on total ownership could delay or even prevent a deal being struck. Lorrho owns 80 per cent of the Observer while the balance is held by the paper's former owners, Atlantic Richfield of the U.S.

"Tiny indicated that he is prepared to sell, but we haven't come up with a deal," Mr Maxwell said after the talks ended.

The offer to sell follows Mr Rowland's public dispute with the Observer's editor over a story he wrote about alleged atrocities in Matabeland, Zimbabwe. Lorrho has extensive interests in Zimbabwe.

# Public spending view damaging, says TUC

BY MAX WILKINSON, ECONOMICS CORRESPONDENT

THE GOVERNMENT'S Green Paper discussion document on the future of public spending, issued at the time of the budget, was condemned by the Trades Union Congress (TUC) yesterday as being misconceived and damaging to Britain.

The TUC said the strategy outlined implied substantial cuts in public services other than defence. "The consequences in terms of poverty, inequality and the undermining of essential services would be appalling." It said such policies would create a society to which the description "private affluence and public squalor" would properly be applied.

The Green Paper suggested that after adjusting for inflation, public spending would need to remain roughly unchanged over the next 10 years, if the Government were to succeed in its strategy of cutting public borrowing and tax rates.

However, the TUC argued that a balanced expansion of public spending, by reducing unemployment and increasing the number of taxpayers, would avoid a massive increase in the tax burden. It rejected the argument that an

increase in public spending would take away national resources from private enterprise. While it said there had to be a limit to the amount of public spending, there was at present no shortage of labour or of plant and equipment.

It added that the restraints on public spending stemming from the Government's medium-term financial strategy were artificial and self-imposed, while the Green Paper failed to provide any analysis of the way in which public spending "can play and has played in the pursuit of economic and social goals."

The TUC said there would be strong demands for increased spending if progress were to be made in alleviating poverty.

It said the Green Paper showed that public spending rose as a proportion of national output over the last 20 years, but it believed the trend had been continuing for much longer.

In the 1940s it was argued that public spending of more than 25 per cent of gross domestic product would spell ruin. However, the present proportion was more than 40 per cent.



## If you can afford to stay anywhere, you can't afford not to stay here.

No matter how much you pay elsewhere, you won't be able to find what you can at our best resort hotels. Not only the luxurious rooms, fine food and impeccable service you expect, but all the joys for the heart and mind that are only found in Spain.

The art, the architecture, the music and crafts and

the food and wine you'll discover will make your holiday unforgettable.

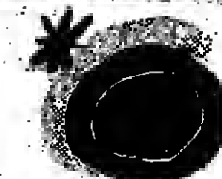
Among your happiest discoveries will be the hotel you choose. In Spain, you'll find the perfect place, no matter what your taste. Castle hotels hundreds of years old, sparkling new hotels to rival the world's best, beachside hotels that

invite you with casual elegance, city hotels that preserve the grand tradition of a more gracious age. All are here, waiting for your pleasure.

The Spanish tradition of hospitality, a deeply-rooted civility and courtesy, will make your stay with us all you had hoped it would be.

Everything made easy for you.

The only difficult thing will be choosing your hotel, because the choice is one of the widest in the world, with more kinds of wonderful places to stay than anywhere under the sun.



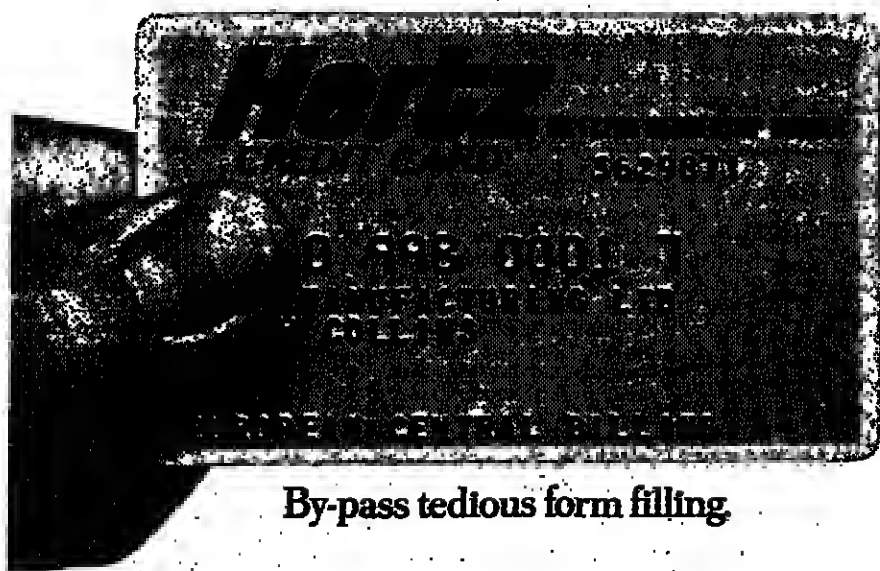
Spain. Everything under the sun.



# On your next business trip, try these short cuts.

With a rented car, your biggest hold-ups aren't always in traffic.

They can hit you as early as the rental desk. Or the car park. Or the road out of the airport.



By-pass tedious form filling

And bearing in mind that time is money, we see it as our job to speed things up at every turn.

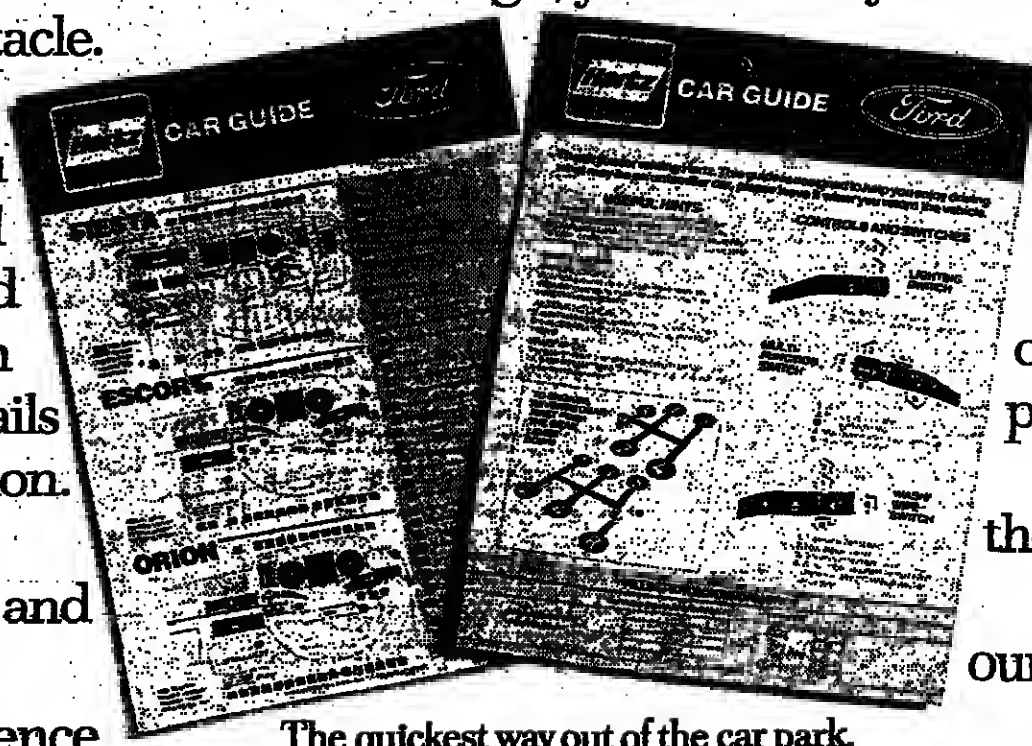
Your pick-up point seemed a good place to start. Who wants to waste time watching agreement forms filled in? (Especially when your schedule's a tight one.)

As a member of our No.1 Club though, you can easily skirt this little obstacle.

Quote your number when you book your car and our computerised reservation system transfers your details to the rental location.

All the paper work's then ready and waiting for you.

Show your licence and your charge card, a quick signature and away you go. It's as close as you'll get to a Le Mans Start. Providing



The quickest way out of the car park.

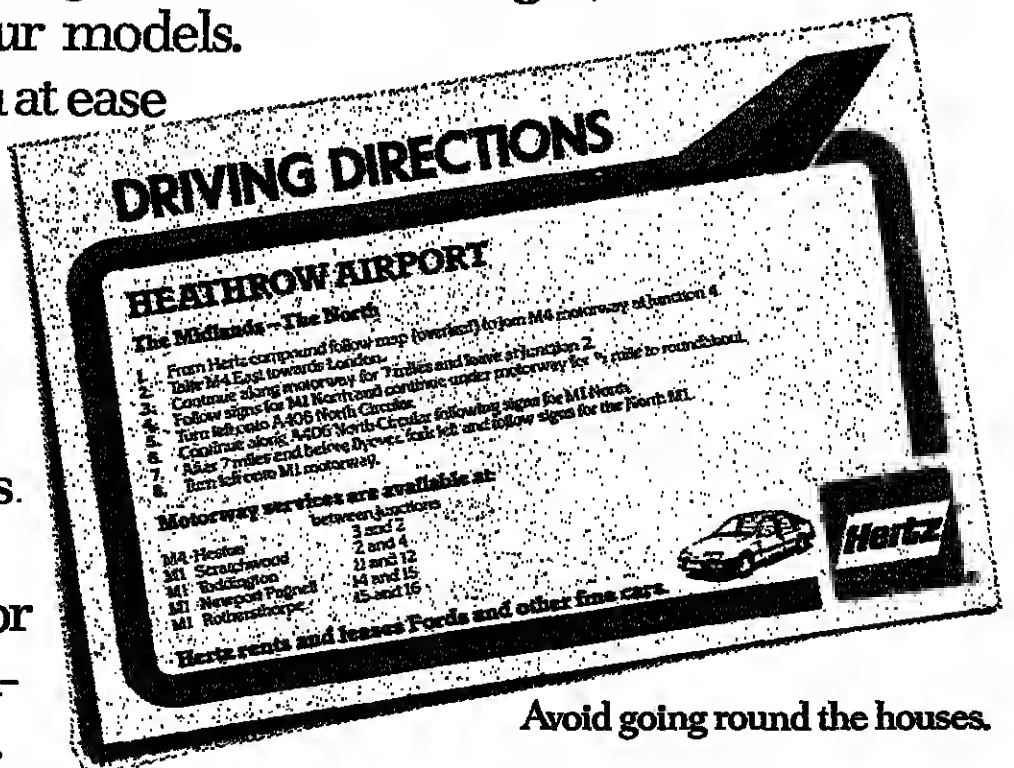
of course, you know how to start your car.

If it's all new to you, you'll waste precious minutes trying to figure things out.

A good enough reason, we thought, to include a car guide in all our models.

It'll put you at ease

right away. Giving you a run-down on the controls. And anticipating difficulties like finding reverse, interior lights or wind-screen wipers.



Avoid going round the houses.

In the same way, we've tried to anticipate any navigational delays.

(Hampton Court Maze has nothing on the roads leading out of some airports.)

So at every major British airport now, we hand out a set of driving directions: carefully worded pointers to the main roads you're likely to need.

As our new slogan says, 'It's all part of the service.'

For more information ring any of our Reservation Centres.

You'll find their numbers below.

Why go the long way round when you can come to Hertz?



It's all part of the service. HERTZ RENTS AND LEASES FORDS AND OTHER FINE CARS.



UK NEWS

Sinn Fein reaps the benefits of a home-grown product

ASK ANY of the participants in the Sinn Fein political wing of the Provisional IRA... Sinn Fein has the advantage of being a home grown product...

The New Ireland Forum is due to report next week. It was set up last year by some political parties in the north and south of the country...

by Dublin to railroad the British in its attempt to renege the SDLP from amphibian. At the same time, they admit that Unionist politicians might welcome the SDLP's defeat...

What is clear, however, is that Sinn Fein are attracting young people in a way none of the other parties appears able to match...

Significantly, Sinn Fein sees its centre to southern politics not on the constitutional question but on social issues. In Dublin, for example, it has become active in the campaign to ouster the city's massive heroin problem...

In the north, Sinn Fein is doing better, though West Belfast is still its only stronghold. In order to establish itself as the voice of northern nationalism, Sinn Fein would have to capture most of the council seats in a wide arc from Derry in the north west through mid-Ulster, Fermanagh and South Antrim to Newry in the south east...

It does not appear to be better established in these areas as a functioning political party than it was three years ago. West Belfast, however, is different. This was never a strong SDLP area. Its former MP Gerry (now Lord) Fitt held it for years with a large personal following...

PRIVATE INVESTORS

Do you have your own London Stockbroker? Walker, Crisp, Weddle, Beck & Co., have been established as stockbrokers in London since 1914...

L. G. Byford, Esq., Walker, Crisp, Weddle, Beck & Co., Kemp House, 152/160, City Road, London EC1V 9PQ. Telephone: 01-253 7567. Telex: 261507 RELF GB.

Viking Resources International N.V. Curacao, Netherlands Antilles

In the Annual General Meeting of Shareholders held on 10th April, 1984 a cash dividend of US\$ 1.55 per ordinary share was declared payable on 27th May, 1984 on the ordinary shares...

Pearson, Holdings & Pearson N.V. Haringracht 214 Amsterdam

Motor Cars

FOLLETT PORSCHE OFFICIAL PORSCHE CENTRES. The name behind the name. Mayfair Showroom, 18 Berkeley Street, W1. City Showroom, 170 Aldersgate Street, Barbican, EC1.

SAAB A MORE INDIVIDUAL CAR FOR THE MORE DISCERNING INDIVIDUAL LEASE... HP... CONTRACT HIRE... OR EVEN CASH! Ring CHRIS PERRETT 01-346 6697

MOTORTUNE. 256 Brompton Road, London SW3. Tel: 5811234. Fax: 22120. Most models available for immediate delivery.

THE WOODBRIDGE COLLECTION. FORD ESPIR 4.0i, one owner, low mileage, full spec, with most extras...

Altwood (0628) 74445. 63A 281A Special, 63B 281B Special, 63C 281C Special...

BROADFIELDS. THE LONDON RANGE ROVER CENTRE. Standard House, Cockspur, W8. 01-449 7301

AUDI CENTRE. Most models available for immediate delivery. LISTERS OF COVENTRY. TEL: 0203 8888

JAGUAR XJS HE V. One owner, covered 51175. F.S.H. £15,450. JAGUAR XJS HE V. One owner, covered 51175. F.S.H. £15,450

NEW Land Rovers - Range Rovers. ALL MODELS AVAILABLE. We undertake to repair any spec. car...

Burlington LANCIA IN LONDON EVERY MODEL IN STOCK. 01-267 7531

BRAMLEY (0483) 898159. Requires low mileage quality car for outright purchase. Please telephone for an immediate offer.

WOODBRIDGE GARAGE. Moseley, Birmingham. 021-449 4227

CITROEN STREATHAM HIGH SERVICE STATION. CITROEN AGENTS. For all models, parts, MOT (also Esso products).

LEASING AND HIRE. GO PERRYS. LEASING? CONTRACT HIRE? HIRE PURCHASE? which is best for YOU?

A NEW FORD FIESTA. From £28.96 p.w. and only £100 deposit. R128A Popular £100 £28.96

NEW CARS TOP DISCOUNTS. Without impairing immediate delivery all makes and models. Leasing - HP at low rates

8% FINANCE ON ALL NEW VAUXHALL NOVAS AND CHEVETTES. HAMILTON MOTORS. 01-733 0022

RFO Ltd. THE WAY TO GO FOR YOUR LEASING, CONTRACT HIRE, FLEET SUPPLY, FLEET MANAGEMENT, and SPECIALIST VEHICLE ACQUISITION

MIDASWAY. ALL FORMS OF R.P. & LEASING. BEST RATES & MODELS. Do not buy before visiting. (0246) 454568

INTERLEAF LTD. Tel: 01-402 4722. (Open Sat 10am - 1pm)

Malaya. SPECIAL CENTRE. 040 381-3341

VOLVO. 41-47 St. John Wood Road, NW8. Lex Brookland. 01-286 6151

MOTOR CAR ADVERTISING. APPEARS EVERY WEDNESDAY AND SATURDAY

NEW HONDA CARS. Immediate Sale or Delivery. Finance, Leasing and Lease purchase. Telephone for prices. 0422-78191

HOLIDAYS & TRAVEL. OVERSEAS. P&O - THE FAR EAST TRAVEL EXPERTS

COLUMBUS. 24 Thayer Street, London W1. Tel: 01-477 0155

RESIDENTIAL PROPERTY. SWITZERLAND ATTENTION FOREIGNERS. On MAY 20th it will be decided by REFERENDUM whether or not FOREIGNERS may continue to purchase property in Switzerland...

UNILEVER N.V. PUBLIC LIMITED COMPANY. NOTICE IS HEREBY GIVEN that the 1983 Annual General Meeting of the UNILEVER PUBLIC LIMITED COMPANY will be held at the Grand Hotel, London, on 25th April 1984...

THE HOLY LAND. JERUSALEM - GALILEE - TEL AVIV. by scheduled EL AL or BA & 11 Days weekly June-October

AMERICAN EXECUTIVES. seek Luxury Furnished Flats or Houses up to £500 per week. Phillips Kay & Lewis. Tel: 01-837 2245

RESTAURANTS, FOOD & WINE. MAHARANI INDIAN RESTAURANT. ESTABLISHED OVER 27 YEARS. 117 Clapham High St. London SW4. Tel: 01-872 2630

UNILEVER N.V. PUBLIC LIMITED COMPANY. NOTICE IS HEREBY GIVEN that the 1983 Annual General Meeting of the UNILEVER PUBLIC LIMITED COMPANY will be held at the Grand Hotel, London, on 25th April 1984...

UK HOTELS. Armthwaite Hall Hotel. BASSETHWAITHE, KESWICK. Tel: (059 681) 351

RESTAURANTS, FOOD & WINE. MAHARANI INDIAN RESTAURANT. ESTABLISHED OVER 27 YEARS. 117 Clapham High St. London SW4. Tel: 01-872 2630

RESTAURANTS, FOOD & WINE. MAHARANI INDIAN RESTAURANT. ESTABLISHED OVER 27 YEARS. 117 Clapham High St. London SW4. Tel: 01-872 2630

UNILEVER N.V. PUBLIC LIMITED COMPANY. NOTICE IS HEREBY GIVEN that the 1983 Annual General Meeting of the UNILEVER PUBLIC LIMITED COMPANY will be held at the Grand Hotel, London, on 25th April 1984...

UK HOTELS. Armthwaite Hall Hotel. BASSETHWAITHE, KESWICK. Tel: (059 681) 351

RESTAURANTS, FOOD & WINE. MAHARANI INDIAN RESTAURANT. ESTABLISHED OVER 27 YEARS. 117 Clapham High St. London SW4. Tel: 01-872 2630

RESTAURANTS, FOOD & WINE. MAHARANI INDIAN RESTAURANT. ESTABLISHED OVER 27 YEARS. 117 Clapham High St. London SW4. Tel: 01-872 2630

UNILEVER N.V. PUBLIC LIMITED COMPANY. NOTICE IS HEREBY GIVEN that the 1983 Annual General Meeting of the UNILEVER PUBLIC LIMITED COMPANY will be held at the Grand Hotel, London, on 25th April 1984...

UK HOTELS. Armthwaite Hall Hotel. BASSETHWAITHE, KESWICK. Tel: (059 681) 351

RESTAURANTS, FOOD & WINE. MAHARANI INDIAN RESTAURANT. ESTABLISHED OVER 27 YEARS. 117 Clapham High St. London SW4. Tel: 01-872 2630

RESTAURANTS, FOOD & WINE. MAHARANI INDIAN RESTAURANT. ESTABLISHED OVER 27 YEARS. 117 Clapham High St. London SW4. Tel: 01-872 2630

UNILEVER N.V. PUBLIC LIMITED COMPANY. NOTICE IS HEREBY GIVEN that the 1983 Annual General Meeting of the UNILEVER PUBLIC LIMITED COMPANY will be held at the Grand Hotel, London, on 25th April 1984...

UK HOTELS. Armthwaite Hall Hotel. BASSETHWAITHE, KESWICK. Tel: (059 681) 351

RESTAURANTS, FOOD & WINE. MAHARANI INDIAN RESTAURANT. ESTABLISHED OVER 27 YEARS. 117 Clapham High St. London SW4. Tel: 01-872 2630

RESTAURANTS, FOOD & WINE. MAHARANI INDIAN RESTAURANT. ESTABLISHED OVER 27 YEARS. 117 Clapham High St. London SW4. Tel: 01-872 2630

UNILEVER N.V. PUBLIC LIMITED COMPANY. NOTICE IS HEREBY GIVEN that the 1983 Annual General Meeting of the UNILEVER PUBLIC LIMITED COMPANY will be held at the Grand Hotel, London, on 25th April 1984...

UK HOTELS. Armthwaite Hall Hotel. BASSETHWAITHE, KESWICK. Tel: (059 681) 351

RESTAURANTS, FOOD & WINE. MAHARANI INDIAN RESTAURANT. ESTABLISHED OVER 27 YEARS. 117 Clapham High St. London SW4. Tel: 01-872 2630

RESTAURANTS, FOOD & WINE. MAHARANI INDIAN RESTAURANT. ESTABLISHED OVER 27 YEARS. 117 Clapham High St. London SW4. Tel: 01-872 2630

UNILEVER N.V. PUBLIC LIMITED COMPANY. NOTICE IS HEREBY GIVEN that the 1983 Annual General Meeting of the UNILEVER PUBLIC LIMITED COMPANY will be held at the Grand Hotel, London, on 25th April 1984...

UK HOTELS. Armthwaite Hall Hotel. BASSETHWAITHE, KESWICK. Tel: (059 681) 351

RESTAURANTS, FOOD & WINE. MAHARANI INDIAN RESTAURANT. ESTABLISHED OVER 27 YEARS. 117 Clapham High St. London SW4. Tel: 01-872 2630

RESTAURANTS, FOOD & WINE. MAHARANI INDIAN RESTAURANT. ESTABLISHED OVER 27 YEARS. 117 Clapham High St. London SW4. Tel: 01-872 2630

UNILEVER N.V. PUBLIC LIMITED COMPANY. NOTICE IS HEREBY GIVEN that the 1983 Annual General Meeting of the UNILEVER PUBLIC LIMITED COMPANY will be held at the Grand Hotel, London, on 25th April 1984...

UK HOTELS. Armthwaite Hall Hotel. BASSETHWAITHE, KESWICK. Tel: (059 681) 351

RESTAURANTS, FOOD & WINE. MAHARANI INDIAN RESTAURANT. ESTABLISHED OVER 27 YEARS. 117 Clapham High St. London SW4. Tel: 01-872 2630

RESTAURANTS, FOOD & WINE. MAHARANI INDIAN RESTAURANT. ESTABLISHED OVER 27 YEARS. 117 Clapham High St. London SW4. Tel: 01-872 2630

UNILEVER N.V. PUBLIC LIMITED COMPANY. NOTICE IS HEREBY GIVEN that the 1983 Annual General Meeting of the UNILEVER PUBLIC LIMITED COMPANY will be held at the Grand Hotel, London, on 25th April 1984...

UK HOTELS. Armthwaite Hall Hotel. BASSETHWAITHE, KESWICK. Tel: (059 681) 351

RESTAURANTS, FOOD & WINE. MAHARANI INDIAN RESTAURANT. ESTABLISHED OVER 27 YEARS. 117 Clapham High St. London SW4. Tel: 01-872 2630

RESTAURANTS, FOOD & WINE. MAHARANI INDIAN RESTAURANT. ESTABLISHED OVER 27 YEARS. 117 Clapham High St. London SW4. Tel: 01-872 2630

UNILEVER N.V. PUBLIC LIMITED COMPANY. NOTICE IS HEREBY GIVEN that the 1983 Annual General Meeting of the UNILEVER PUBLIC LIMITED COMPANY will be held at the Grand Hotel, London, on 25th April 1984...

UK HOTELS. Armthwaite Hall Hotel. BASSETHWAITHE, KESWICK. Tel: (059 681) 351

RESTAURANTS, FOOD & WINE. MAHARANI INDIAN RESTAURANT. ESTABLISHED OVER 27 YEARS. 117 Clapham High St. London SW4. Tel: 01-872 2630

RESTAURANTS, FOOD & WINE. MAHARANI INDIAN RESTAURANT. ESTABLISHED OVER 27 YEARS. 117 Clapham High St. London SW4. Tel: 01-872 2630

UNILEVER N.V. PUBLIC LIMITED COMPANY. NOTICE IS HEREBY GIVEN that the 1983 Annual General Meeting of the UNILEVER PUBLIC LIMITED COMPANY will be held at the Grand Hotel, London, on 25th April 1984...

UK HOTELS. Armthwaite Hall Hotel. BASSETHWAITHE, KESWICK. Tel: (059 681) 351

RESTAURANTS, FOOD & WINE. MAHARANI INDIAN RESTAURANT. ESTABLISHED OVER 27 YEARS. 117 Clapham High St. London SW4. Tel: 01-872 2630

RESTAURANTS, FOOD & WINE. MAHARANI INDIAN RESTAURANT. ESTABLISHED OVER 27 YEARS. 117 Clapham High St. London SW4. Tel: 01-872 2630

COMPANY NOTICES

UNILEVER N.V. Rotterdam The Netherlands. ANNUAL GENERAL MEETING OF SHAREHOLDERS. On Wednesday, 25th May 1984 at 10.30 a.m. in the "Kluis Zaal" of the "Concertgebouw de Doelen", entrance Kruisplein 30, Rotterdam

NOTICE TO HOLDERS OF BEARER DEPOSITORY RECEIPTS (BRDS) IN DAI NIPPON PRINTING CO. LTD. BDR holders are informed that Dai Nippon Printing Co. Ltd. has decided to divide the cash dividend payable in Yen 5 per Common Stock of Yen 50.00 per share...

PROVINCE OF MANITOBA (CANADA) PUBLIC LIMITED COMPANY. NOTICE IS HEREBY GIVEN that the 1983 Annual General Meeting of the PROVINCE OF MANITOBA (CANADA) PUBLIC LIMITED COMPANY will be held at the Grand Hotel, London, on 25th April 1984...

UNILEVER N.V. PUBLIC LIMITED COMPANY. NOTICE IS HEREBY GIVEN that the 1983 Annual General Meeting of the UNILEVER N.V. PUBLIC LIMITED COMPANY will be held at the Grand Hotel, London, on 25th April 1984...

ENTE NAZIONALE PER L'ENERGIA ELETTRICA. 7 1/2 PER CENT 1971-1986 LOAN OF EUROPEAN CURRENCY UNITS. NOTICE IS HEREBY GIVEN to bondholders of the above mentioned loan...

AKZO N.V. 4 1/2% U.S. CONVERTIBLE DEBT SECURITIES. NOTICE IS HEREBY GIVEN that the 1983 Annual General Meeting of the AKZO N.V. will be held at the Grand Hotel, London, on 25th April 1984...

ENTE NAZIONALE PER L'ENERGIA ELETTRICA. 7 1/2 PER CENT 1971-1986 LOAN OF EUROPEAN CURRENCY UNITS. NOTICE IS HEREBY GIVEN to bondholders of the above mentioned loan...

OFFICIAL NOTICE. Please be advised that the following London Metal Exchange Warrant covering Silver has been reported and issued by the London Metal Exchange...

CLASSIFIED ADVERTISEMENT RATES. Commercial and Industrial Property Residential Property Appointments Business, Investment Opportunities, Business for Sale/Wanted Personal Minor Cars Hotels and Travel Contracts and Tenders Book Publishers

For further details write to: Classified Advertisement Manager Financial Times, 10 Cannon Street, EC4A 3DF





# Every month 1,000 companies go bust. You can't always blame the economy.

According to a recent report in a financial newspaper, companies go to the wall for all manner of reasons.

In many cases the economy has little to do with it.

Those popular whipping boys, the Government and the unions, don't even get a mention. Nor should we automatically point the finger at the EEC or the microchip.

For the most part, the bald truth is that when companies get into trouble they have only themselves to blame.

Mismanagement of stocks. Lack of capital. Setting up in the wrong location. Lack of trust and communication between managements and their accountants. Too rapid and under-researched expansion. Old-fashioned production techniques. And so on.

The same blunders crop up time and again.

How do level-headed, hard-working businessmen get themselves into such a jam?

#### HOW MISTAKES ARE MADE.

In our experience, it's not just that managements make the wrong decisions.

Increasingly they are making decisions too late.

Usually because they are short of information.

Or the information is in the wrong form. Or it's in the wrong place.

What this calls for, we believe, is nothing less than a root and branch reorganisation of working procedures.

And a lot of companies agree with us.

Over 200 of them in Britain are already using Hewlett-Packard office systems to improve their productivity.

Be under no illusions. This goes much further than a computer for the accounts department and a word processor for your secretary.

It's a way of making available at a moment's notice every scrap of information you need to make decisions.

#### A BETTER WAY OF WORKING.

We'll provide you with the means to create, revise, store, print, retrieve and distribute letters, reports, mailing lists, graphs and charts without moving from a desk or lifting a telephone.

And this refers to material stored not just ten floors below but written five minutes ago in an office on the other side of the world.

Effectively, almost every task your staff perform can be speeded up.

#### WHERE DO YOU START?

First you have to decide what needs to be done.

And that depends on your type of business, the number of people you employ and how many computers you have already.

(Incidentally, Hewlett-Packard computers are compatible with other makes of computer, so we can usually incorporate those you are currently using into our system.)

Initially, we like to explain in general terms the service we provide.

We'll then invite you to our international headquarters in Berkshire to discuss specific applications and see all our products in action.

It's much more than a demonstration.

Our own business procedure is built around an Office Automation System, enabling us to test everything we make in a real working environment.

(Not the case with all our competitors. They don't always practise what they preach.)

Next we like to spend two or three days looking at the way you

work, studying your office layout and talking to your staff.

Up to this point it won't have cost you a penny.

If you wish to take things further, we'll carry out more studies and present our findings in the form of an analysis report.

In this report we commit ourselves to assessing both the short-term and long-term benefits your company will derive from employing Hewlett-Packard.

With our reputation clearly on the line, you can bet we make sure we get it right.

#### WHAT FORTUNE SAID ABOUT HEWLETT-PACKARD.

In the United States we are known as one of the pioneers of computer systems.

In a recent poll, readers of Fortune Magazine placed us ahead of our rivals on a number of counts: the quality of our products, the service we provide, new ideas and our ability to attract and keep the most talented people.

We came to Britain twenty years ago, since when we've quietly established ourselves as a leader in Office Automation Systems.

We have training and support personnel in 25 service centres in Britain. They are on call twenty-four hours a day, seven days a week.

Sooner or later, all companies will get around to investing in Office Automation.

The worry is that your competitors may have decided to do it sooner.

Either phone us on 01-935 6109 during office hours or telex our Office Automation Programme Manager, on 848805.

Or for your information pack, write to Enquiry Section FT2, Office Automation Systems, Hewlett-Packard Limited, Eskdale Road, Winnersh, Wokingham, Berkshire RG11 5DZ.

 **HEWLETT  
PACKARD**





THE MANAGEMENT PAGE

EDITED BY CHRISTOPHER LORENZ

WARTSILA, best known as a builder of luxury cruise ships — it is currently completing the 45,000 ton Royal Princess for F&O Cruises — will tomorrow become the first Finnish company to be listed on the London Stock Exchange.

Last week's placing of around 650,000 new shares in London raised some £25m for the company. The newly issued shares had restricted voting but equal dividend rights. Shareholders recently approved an overall limit of 910,000 new shares, of which the London issue was a part.

Wartsila is not the only Finnish company keen to attract UK and other foreign investors. Amer, whose activities cover tobacco, publishing and printing, and the manufacture of ice hockey sticks, also plans to come to London. "We need a very good financial base and Finland is not sufficient for us," says Tor Stolpe, president of the company and vice-chairman of the management board.

Though the company has just raised FM 150m through a rights issue, Finland's capital markets are too under-developed and heavily orientated towards tax-free savings bonds. The group has expanded its foreign sales and facilities rapidly in recent years.

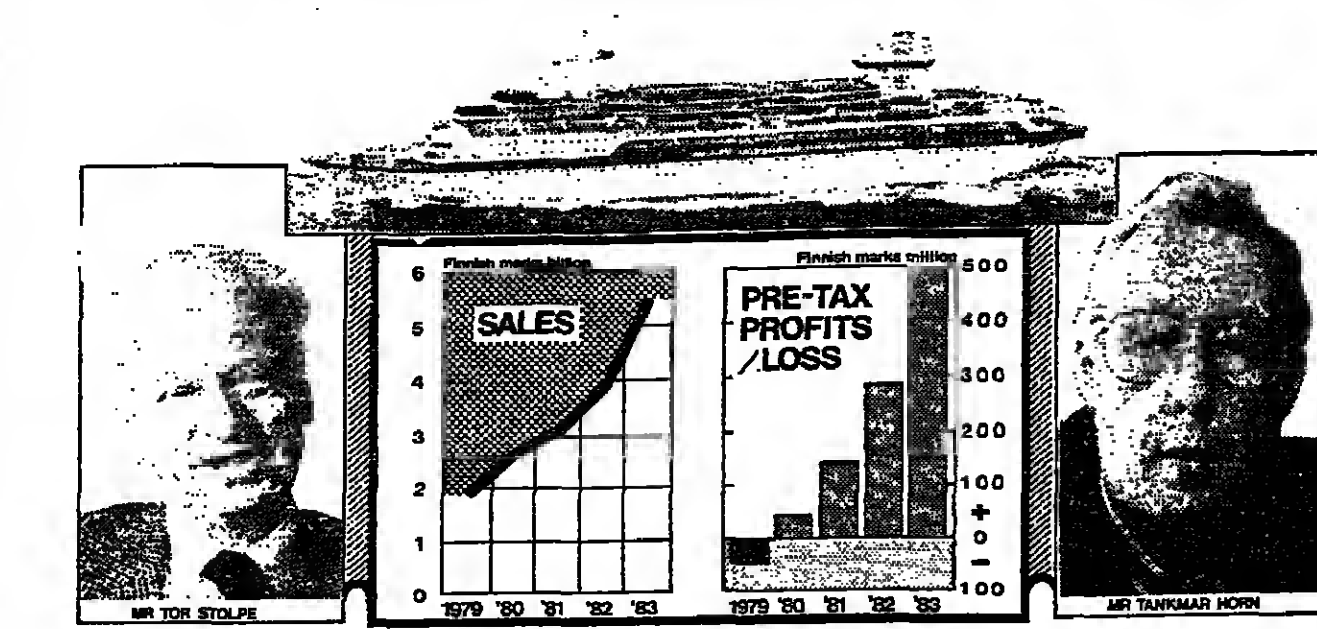
Thus, adds Stolpe, a white-haired 56-year old with pleasant, chubby features who began his career as a geologist: "It is absolutely necessary for us to go abroad. Marketing and research costs are rising as Wartsila builds up its specialised markets and moves into new areas."

As well as tapping new sources of finance — it is also listed in Stockholm, where its issue last April raised FM 57m (£7.1m) — Wartsila is keen to boost its international image. With 85 per cent of its sales abroad, the company (150 years old this month) is no stranger to foreign markets.

But until five years ago, it had no foreign plants. Now it has 13 in four countries. Most of its non-Finnish sales are to neighbouring Scandinavia (25 per cent) or the Soviet Union, (28 per cent). In future, it wants to strengthen its presence elsewhere.

Though ships make up the bulk of the group's turnover, Wartsila is heavily involved in other industries. It makes machines for paper-finishing (coating, imparting gloss, rolling, and wrapping), diesel engines, locks and security devices, sanitary and industrial porcelain, and domestic glass and porcelain products.

While not disdaining future growth in shipbuilding where its reputation for complex



## Why Wartsila is sailing into foreign capital markets

Andrew Fisher reports on the Finnish industrial group's growing internationalisation

cruise, ice-breaking and other vessels outside the bulk cargo market is high, the group wants to build up its other activities more rapidly.

It bought Appleton Machine Company, a Wisconsin maker of paper-finishing equipment last year, as well as TrioVing of Norway and VingCard of the U.S., related companies which make locks and computerised hotel security systems. Wartsila also opened a diesel engine plant in Singapore in partnership with Keppel Shipyard.

At the same time, Wartsila has continued investing in its two shipyards: at Helsinki where the cruise ships are built, as well as ice-breakers, and at Perno near Turku where ice-strengthened cargo vessels and other special vessels are built. In all, Wartsila spent FM 426m last year on capital investments and acquisitions.

To investors unfamiliar with Wartsila, such an array of activities could be confusing. But the company does not make a habit of random diversification; it claims its moves are based on well thought out strategies. "Seeing your business with the market's eyes," is how Ari Valjakka, in charge of personnel and communica-

tion, puts it. The conversion of Wartsila managers is peppered with references to strategic planning and management training.

The Appleton and TrioVing/VingCard purchases both sprang from the planning process. "It was a classic textbook case," says Pekka Virtanen, head of the engineering division about the \$3m Appleton deal. Wartsila saw a need to have a paper machinery plant in the vast U.S. market, studied the market and went through a list of companies.

### 'Total concept'

It picked out Appleton and approached the company, then owned by its management and staff. The existence of a ready-made plan went down well with the company, believes Sven Bertram, in charge of planning. "We could convince them that we had a good total concept."

He adds: "It would have been impossible to proceed efficiently and so fast in our internationalisation in the past five years without a strong strategic planning process."

Since the late 1970s when the problems of the world ship-

building market affected its own operations and led to a FM 48m loss in 1979, Wartsila's results have improved sharply. From FM 42m in 1980, pre-tax profits rose to FM 493m last year. Sales in the same period soared from FM 2.6bn to FM 5.4bn, of which shipbuilding accounted for 64 per cent.

As well as the lucrative cruise market, Wartsila is heavily dependent on regular Soviet orders placed under the successive five-year plans. These are fixed early in the life of the plans and give the company a comfortable revenue cushion. Several orders have just been placed by the Soviet Union with Finnish yards ahead of the next plan, starting in 1986. These include two dredgers for Siberian river deltas, worth a total of FM 300m.

As Wartsila has expanded its geographical spread and built up its profits, it has developed a management structure not unlike that of many U.S. companies. Stolpe acts in the role of chief executive officer, though his title is different.

He is the driving force behind the strategic planning process, believing "it is very important to be able to combine

new theories with practical experience." Wartsila, he says, is a company specialising in solving complex problems for its customers.

This can apply to cruise ships, special Arctic vessels, or other products. "Each is a project which forces our specialists to solve a lot of new questions." But looking ahead, he adds: "We are not married to our businesses forever—we are married to making profits. We could drop some of them."

Technically senior to Stolpe, though the two men work closely together, is Tankmar Horn, chairman of the group's board of directors (a nine-man group of mainly outsiders, meeting once a month and approving major decisions) and of its four-man management board.

Stolpe thinks the group approach works well. "I do not think a company like Wartsila, in sophisticated, flexible, and difficult businesses, can be run by one man. It has to be run as a team."

Horn, tall, patrician looking, and three years older than Stolpe, agrees with his colleagues. "There is a kind of broad division, with Stolpe

mainly responsible for the operations, while I am more involved with bigger individual deals."

In Finland, he has the courtesy title of Minister Horn, stemming from his days at the Foreign Ministry where he ended up as head of the trade policy division before joining Wartsila in 1969.

Horn's task, deriving from his diplomatic experience, is also to maintain links with the Finnish authorities and with the Soviet purchasers of new ships. "From my point of view, it works very well indeed," says Stolpe of the dual responsibility arrangement. "He has a lot of experience in international business and trade; I am more experienced on the practical side."

Horn is aware that investors are likely to be highly sceptical of anything to do with such industries as shipbuilding. "We hope to get the message across that though we are working in a field considered, and rightly so, to be in a crisis, individual companies can still score fairly well in that field."

Wartsila stresses that many of the ships it has built have been prototypes. "We are able to accept orders for one item and not just series," explains Horn.

The group has spent heavily on new research facilities. This year has seen the opening of a new FM 20m research plant for paper-finishing machinery.

Virtanen, soon to move to the diesel division, says the building of the paper machinery research plant was one of the most significant decisions ever made in the engineering division. It is not just bigger and better machines that are needed, he comments. "You have to build machines with which the customer can compete and make money."

Like all the divisional heads, he reports directly to Stolpe, who insists that "strategic planning" should take full account of alternative courses of action in case things go wrong. "It's better to see the dark clouds, before, try to analyse them, and deal with them if necessary."

Wartsila has been doing long-range planning since 1972. It was only in 1979, says Bertram, that the focus was really put on the strategic aspect. Each division and profit centre starts working out its plans and budget in the spring and hands this to the board in June. On the basis of these the group plan is drawn up, covering around five years for shipbuilding and three years for other activities.

The danger is that planning can be accepted as an exercise

in itself. Wartsila tries to get round this by seeing that not too many people, and as little bureaucracy as possible, are involved. "The strategic plan," comments Goran Andersson, who runs the locks division, "is like a balance sheet. It describes the thinking at one point in time. You expect consistency, but things can change in between."

Building up a team of energetic, flexible, and committed managers is not easy in a small country like Finland, with only 4.5m inhabitants. "Finland is really short of managers," says Horn.

Wartsila has tried hard to build on the skills and talents available to the group. It employs nearly 15,000 people, more than half in shipbuilding and including 3,000 abroad. Of the total 1,400 are graduate engineers and 1,700 technicians. The company has tried to develop, so-called "special skills" among its managers. Some 200 top managers have been through its main training programme, and 1,000 middle managers are about to go through a new scheme in the next three years.

### Action learning

It is also putting some managers through what are dauntingly called "action learning schemes." "We throw a person from a familiar environment to an unfamiliar environment or task, or both," explains Valjakka.

Five years ago, a group of Wartsila managers and workers, headed by Valjakka, went on an exhaustive and exhausting 16-day trip round Japanese plants, holding their own seminars along the way and honing up all the time on what they had learnt.

Beyond the walter of concepts, strategy, and training, how is Wartsila likely to fare in the years ahead? This year profits are forecast to be up, with 1985 likely to see a drop. While Wartsila expects further ice-breaker and cruise ship orders — it is to build an advanced icebreaker for Finland — orders have peaked for the moment.

Also, the group accepted two large ferry orders for Finnish shipowners at low prices to stop them going to Japan.

"We can't accept that the big guys without work come here just to get the know-how. We had to fight for our interests and we shall fight again if forced to," maintains Stolpe, "it is by no means a corporate panacea. Wartsila will not be easily displaced from the areas in which it has well-carved niches."

### Management abstracts

Human resources accounting data and decision-making. T. A. Shimerda in Cost and Management (Canada), May/June 83: p. 41 (5 pages). Summarises the results of research studies which seem to show that the publication of human resources accounting data can affect management decision-making for instance in job staffing and layoff decisions.

Size of organisation and attitudes to work. G. Stephenson and others in Industrial Relations Journal (UK), Summer 83: p. 38 (12 pages, table). Reports the findings from a study of companies in the printing, engineering, hosiery, and food industries, on relationships between size of organisation and workers' attitudes to their jobs; draws conclusions that, simplified, show that small is good for industrial relations and large is bad for job satisfaction.

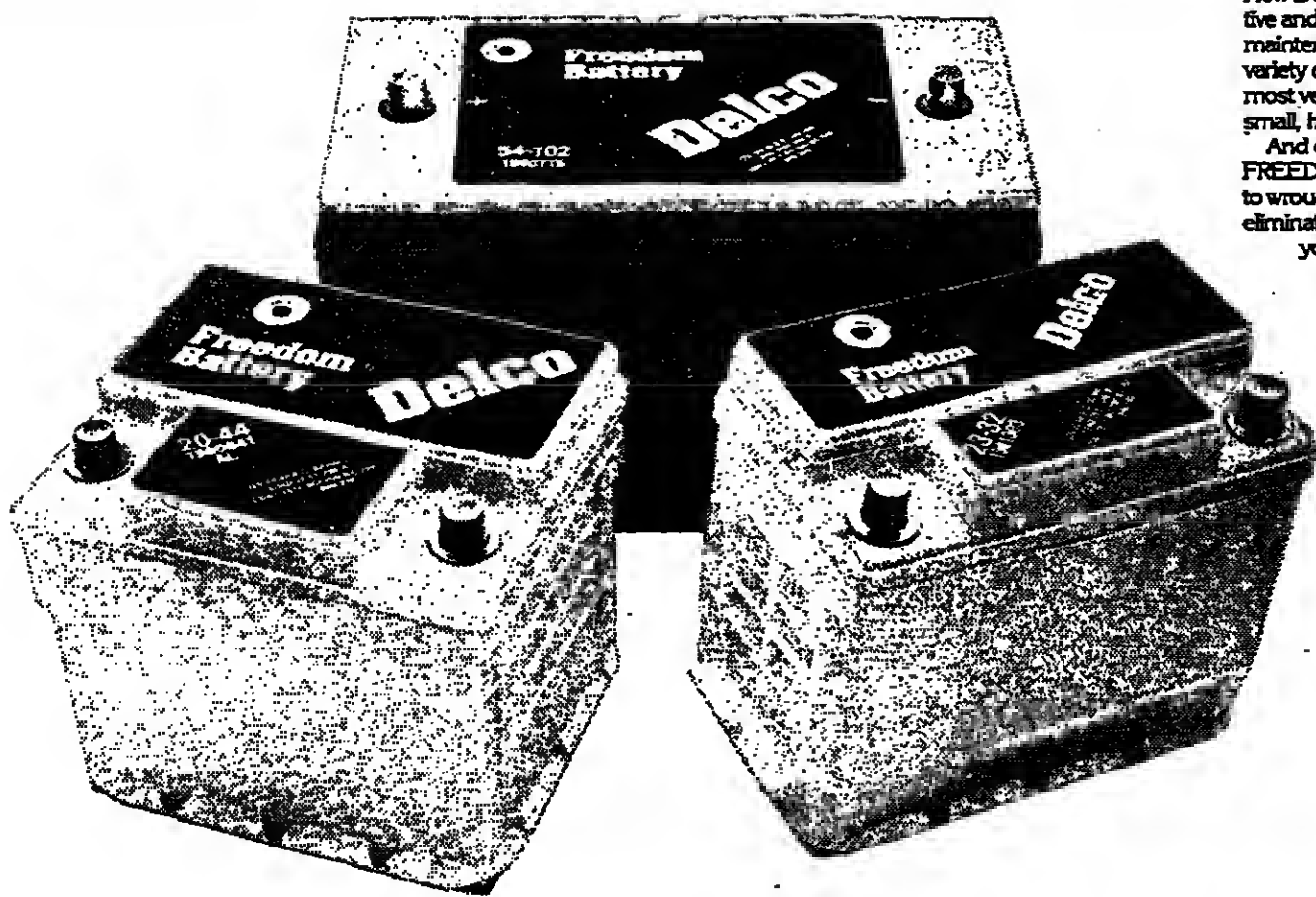
Demystifying Japanese management. J. M. Smith in Management Decision (UK), Vol 21 No 3.

Argues that fascination with Japanese management methods and practices tends to overlook the deeply-rooted cultural differences. Examines Japanese attitudes to the organisation, the management hierarchy, business negotiations, quality control, and R&D, and concludes that what may be able to apply is very difficult to determine. Stresses that the way the Japanese do business is based on a long historical tradition, and that they are now considering transforming their authoritarian management style into a more open and democratic one along Western lines.

Developing strategic thinking. M. Eastaby-Smith and J. Davies in Long Range Planning (UK), Aug 83. Argues that strategic ability will not blossom among senior managers unless it has been cultivated early in their careers; is sceptical about the value of formal courses—unless accompanied by a strong action element; discusses how internal management development can help give young managers exposure to strategic issues.

These abstracts are condensed from the abstracting journals published by Anbar Management Publications. Licensed copies of the original articles may be obtained at £3 each (including VAT and p+p; cash with order) from Anbar, PO Box 13, Wembley HA9 8DJ.

# A great start for any design.



There's a Delco Freedom Battery for you. Now Delco Remy can offer Europe's automotive and truck designers an extended line of maintenance-free Freedom Batteries. With a variety of sizes and performances to match most vehicle applications from big diesels to small, high-performance compact cars.

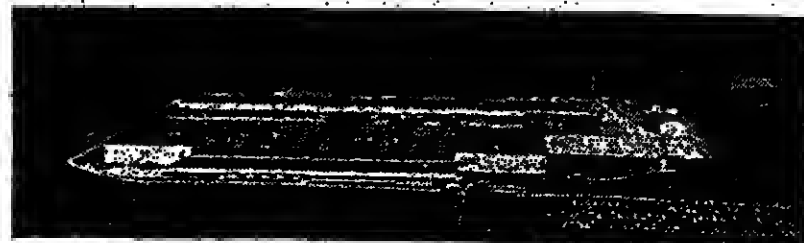
And each battery has the big advantage of FREEDOM. Freedom from maintenance due to wrought lead calcium grids that practically eliminate gassing and water loss. That means you never have to add water. What's more, every Freedom Battery is built with a sealed top to prevent internal damage and contamination.

Tough, versatile automotive batteries. Delco Remy can deliver the performance plus the flexibility you need to make your design work.

That's because Freedom Batteries come in a variety of efficient sizes that can help you trim weight and save space and fuel. Each model is also available with terminal configurations to meet your specific application requirements.

Heavy-duty truck batteries. Whether you need an all-round battery for trucks and buses in commercial service or extra cranking power for big diesels and cold starts, Delco Remy has a heavy-duty Freedom Battery to do it. Plus cycling models with ready reserves of standby power for extended idling uses.

Best of all, Freedom Batteries are built in Europe, for the vehicles of Europe, and for the special needs of Europe's automotive designers. Freedom Batteries from Delco Remy. You couldn't ask for a better start for your next design. Delco Remy, Division of General Motors, Milton Keynes, England; Russelsheim, W. Germany; Gennevilliers, France; Milan, Italy. World Headquarters—Anderson, Indiana, U.S.A.



Our factory in Soesseguesmes, France, is the world's newest and most modern automotive battery facility.

A world leader in automotive electrical systems.





دورنا صحت القوم

# ENERGY REVIEW

By Aleksandar Lebl, Belgrade Correspondent

## The high price of neglect

THE ENERGY situation in Yugoslavia is almost back to normal — that is to say no black-outs, no petrol rationing, no power reductions for industrial consumers, for the time being.

A few months ago the picture was quite different. Last year's drought, the worst in decades, hit Yugoslavia like other countries in the Danube river basin. The effect was drastic, even in the federal capital, Belgrade, whose residents were subjected to eight and a half hour power cuts on four days out of every five. In the republic of Serbia, of which Belgrade is also the capital, electricity consumption by 20 per cent from the 1982-83 level. Electric power had to be imported from neighbouring countries, from France and from the Soviet Union.

The energy crisis fuelled discontent among Yugoslavs, already dissatisfied with a fall in living standards of nearly one-third in the past four years. Apparently uncertain about what to do, the federal government turned the main responsibility for action over to local emergency planning committees which themselves had no solutions to offer. Then the heavens intervened, just in time to give the Winter Olympics, held at Sarajevo in the Yugoslav republic of Bosnia, almost too much snow.

With plenty of rain and snow this spring, hydroelectric power output has increased, while the growth of consumption has fallen off in response to rising prices. The government has raised electricity prices by 50 per cent this year. But the International Monetary Fund and the World Bank, as part of their loan packages for Yugoslavia, are pushing for further increases to bring domestic prices more in line with world levels. So, of course, is the Yugoslav power generating industry.

The 1983 drought may have been the immediate cause of Yugoslavia's recent energy problems, but it was not the main reason for them. It only exposed weaknesses and shortcomings in energy policy. Indeed, many experts here believe it almost miraculous that decades of neglect of the energy sector did not show up earlier.

The main factor is that invest-



ment in hydro and thermal power plants and in coal mining has been far too low for the rapid industrialisation of the 1970s and electrification of households. Yugoslavia was also very slow in adjusting to the first oil price shock of 1973-74, and as a result continued building liquid fuel power plants long after the rest of the world was switching back towards coal or gas.

Last year, when oil imports were cut to save foreign exchange, many power plants using bunker oil were idle when their generating capacity was badly needed. Indeed, idle capacity amounted to some 1,000 MW, capable of generating 6bn kWh a year, more than the total power cuts and imports last year.

Inadequate energy investment has not been for lack of funds. A major reason for the under-spending has been lack of agreement on what to build and where—the usual in-fighting between the country's eight republics and provinces which bedevils Yugoslav politics.

The classic case is the Drina River basin, the biggest in Yugoslavia and the fourth largest of its kind in Europe. Drina River hydro-plants have the capacity to produce some 10bn kWh a year, even in relatively dry years, because of the many accumulations of lakes in the system. But the Drina is the border river between two republics, Bosnia-Herzegovina and Serbia: it is formed by two con-

fluent rivers, the Piva and Tara, which come from a third republic, Montenegro. For two decades now these three republics have been unable to agree on a joint programme of hydro power construction. Of a tentatively planned 25 hydro projects, only seven have been built.

The main obstacle has been the Montenegrin republican government. It wants part of the Piva and Tara water to be transferred to another Montenegrin river, the Moraca, claiming that this solution would benefit both it and the whole Yugoslav hydro system. The other two republics dispute this and object to the high cost of the solution advocated by the Montenegrins. Tripartite negotiations continue, but without an end in sight.

Another region of the country, the province of Kosovo, has ample reserves (around 10bn tonnes) of lignite, of good quality to be used for anything but power generation. Power plants totalling 6,000 MW capacity have been planned, but so far only one plant, of 790 MW capacity, has been built. Even this plant is not being fully exploited, because lignite production, running at 7.5m tonnes, is below the 10m tonnes planned.

Thus, the Yugoslav power generation industry is forecasting more cuts and blackouts, particularly when the economy, which has had stagnant industrial production for some two years, begins to recover. Specifically, the power industry

estimates that consumption will have to be cut by 2.8bn kWh this year and by 3.7bn kWh next year.

Plans exist for expanding hydro thermal and nuclear power. According to Mr Rade Pavlovic, chairman of the federal committee for energy and industry, by the year 2000 Yugoslavia should have 12,000 MW of thermal capacity, 8,000 MW of hydro and 2,000 of nuclear power capacity on stream. The construction of a further 4,000 MW capacity should be underway.

Where the money for all this will come from is not clear. It will mean devoting to energy 12-15 per cent of total investment or 30-35 per cent of industrial investment. The energy sector has been largely spared the public spending axe which the federal government has been recently wielding with IMF blessing. Yugoslavia is also getting World Bank loans for energy.

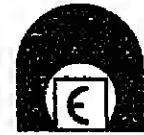
One urgent priority is to define the future shape of the Yugoslav nuclear programme. So far Yugoslavia has built only one nuclear plant at Krsko, on the Sava river near the border between the republics of Slovenia and Croatia, with equipment supplied by Westinghouse. The intention is to build a second one in Croatia, near Zagreb, but a decision has yet to be taken on the type of foreign design and equipment to buy.

Nuclear plant manufacturers from Britain, the U.S., France, West Germany, Sweden, and the Soviet Union (possibly in conjunction with Finland) have been wooing Yugoslavia for this order. But until this decision is taken, possibly by the end of 1984, the country cannot get on with its nuclear power programme.

Oil shale is considered a possibly promising energy source for the future. According to one estimate, total reserves of shale amount to some 10bn tonnes in the republic of Serbia alone, with oil content of 10-26 per cent. The largest deposits, of some 3bn tonnes, are around Aleksinac, a small town 150 miles south of Belgrade, where a pilot production plant is to start soon.

Meanwhile, Yugoslavia will have to rely on imports for a large portion of its energy needs.

This announcement appears as a matter of record only



European Coal and Steel Community

ECU 60,000,000  
6% 1984-1994 Bonds

Date of Issue : April 12, 1984  
Bonds due : April 12, 1994  
Issue Price : 100 %  
Redemption Price : 175 %  
Yield to Maturity : 10.577 %

SPAREBANKEN OSLO AKERSHUS

BANQUE INDOSUEZ

SPAREKASSEN SDS

ALGEMENE BANK NEDERLAND N.V.  
BANQUE GENERALE OU LUXEMBOURG S.A.  
BAYERISCHE VEREINSBANK A.G.  
PROVINSBANK A/S  
ISTUTITO BANCARIO SAN PAOLO OI TORINO  
SECURITIES CO. (EUROPE) LTD.

ANDELSBANKEN A/S DANEBANK  
BANQUE INTERNATIONALE A LUXEMBOURG  
BIKUBEN  
DEN norske CREDITBANK (Luxembourg) S.A.  
NIPPON EUROPEAN BANK S.A.-LTCS GROUP  
SVENSKA HANDELSBANKEN GROUP  
S.G. WARBURG AND CO. LTD.

BANK BRUSSEL LAMBERT N.V.  
BANQUE PARIBAS  
OAIWA EUROPE LIMITEO  
FAELLESBANKEN FOR DANMARKS SPAREKASSER A/S  
KREDIETBANK INTERNATIONAL GROUP  
POSTIPANKKI  
SOCIETE GENERALE  
SWISS BANK CORPORATION INTERNATIONAL LIMITEO  
WESTDEUTSCHE LANDESBANK GIROZENTRALE

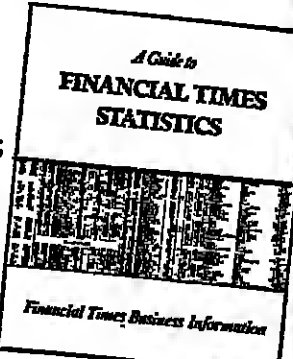
March 1984

## A Guide to Financial Times Statistics

New 1984 Edition

Price: £9.50 UK or £11/US\$19 overseas  
Prices include postage and packing.

Available from:  
The Marketing Dept. Financial Times Business Publishing,  
102 Clerkenwell Road, London EC1M 5SA. Tel: 01-251 9321.  
(Mail order address only).



In war, in peace you need his help



When help is needed, please help him and his dependants

A donation, a covenant, a legacy to THE ARMY BENEVOLENT FUND will help soldiers, ex-soldiers and their families in distress

DEPT. FT. 41 QUEEN'S GATE, LONDON SW7 5HR

# Could you work in these surroundings?

Possibly the most beautiful campus style office building in the Western Corridor.



Gateway One: 157,000 square feet of super campus style offices on six floors. Winner of four architectural awards, including one for energy conservation, Gateway One is built to standards of finish and specification seldom found in competing buildings. 355 covered car parking spaces lead to an efficient reception area: from this, the office areas are approached by six high speed lifts.

Each level offers access to a superb mature roof garden. These features, as well as economic constant volume perimeter air-conditioning, full carpeting, the ready installed ITT telephone system, the fully fitted kitchens and canteen facilities and the under floor voids for easy



access to cables combine to make Gateway One an unparalleled building, in idyllic surroundings.

Basingstoke—a thriving business centre surrounded by the beautiful Hampshire Countryside.

Gateway One occupies an important position on the Basing View Business Area. 5 minutes walk from the station and town centre, which offers superb shopping facilities. Surrounding Basingstoke is some of the most beautiful countryside in the Home Counties. Rolling farmland, pretty, unspoilt villages: Dummer, with its charming thatched cottages, Deane, Preston Candover, Upton Grey and Steventon; all ideal places to live. 2 minutes from Gateway One is junction six of the M3. To the South, less than half an hour's drive is Houghton, and the famous River Test, offering some of the finest trout fishing in the area. Further South, Portsmouth and



Southampton provide deep water ports with modern container facilities, while to the East lies London...

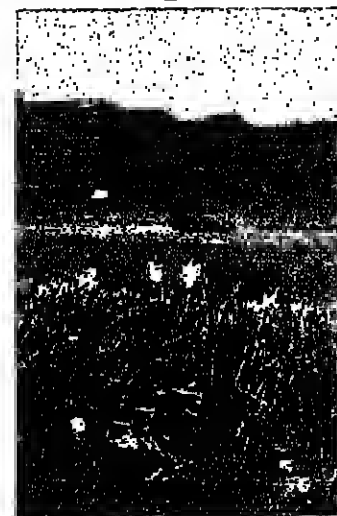


Less than thirty minutes to Heathrow... and only an hour's drive to Central London, Basingstoke is an ideal strategic site for a corporate headquarters. Road communications will be enhanced in 1986 with the completion of the M25 orbital motorway, permitting easy access to the entire national motorway network, as well as Gatwick Airport.

And you're in Good Company.

More and more international businesses are choosing Basingstoke as a corporate centre. Gateway One is surrounded by famous names: IBM, Digital, AA, Wiggins Teape, De La Rue and Sony all have major buildings on the Basing View Business Area. Basingstoke can provide skilled

employees for any major business. And Gateway One can provide the ideal surroundings.



For further information contact Roger Dean at

**Strutt & Parker**

13 Hill Street Berkeley Square London W1X 8DL  
Tel: 01-629 7282  
Telex: 8955508





This advertisement appears as a matter of record only.

April 1984



# Red Nacional de Los Ferrocarriles Espanoles

## ¥20,000,000,000

### Long Term Loan

Guaranteed by  
**The State of Spain**

## ¥10,000,000,000

with fixed interest rate

Lead Managed  
and Provided by

**The Industrial Bank of Japan, Limited**

Managed  
and Provided by

- The Bank of Tokyo, Ltd.
- The Long-Term Credit Bank of Japan, Limited
- The Nippon Credit Bank, Ltd.
- The Mitsubishi Trust and Banking Corporation
- The Mitsui Trust and Banking Company, Limited

Co-Managed  
and Provided by

Canadian Imperial Bank of Commerce,  
Tokyo Branch

Westdeutsche Landesbank Girozentrale,  
Tokyo Branch

Provided by

- The Dai-Tokyo Fire and Marine Insurance Co., Ltd.
- Asahi Mutual Life Insurance Company
- The Dowa Fire & Marine Insurance Co., Ltd.
- The Kyoei Mutual Fire and Marine Insurance Company
- The Nichido Fire and Marine Insurance Company, Limited

Agent

**The Industrial Bank of Japan, Limited**

## ¥10,000,000,000

with floating interest rate

Lead Managed  
and Provided by

- The Dai-ichi Kangyo Bank, Limited**
- The Mitsubishi Bank, Limited**
- The Sanwa Bank, Limited**
- The Sumitomo Bank, Limited**
- The Tokai Bank, Limited**

Managed  
and Provided by

Banque Nationale de Paris,  
Tokyo Branch

**Crocker National Bank,**  
Tokyo Branch

Co-Managed  
and Provided by

Morgan Guaranty Trust Company of New York,  
Tokyo Office

Westdeutsche Landesbank Girozentrale, Tokyo Branch

Lloyds Bank International, Limited, Tokyo Branch

The Yamaguchi Bank, Ltd.

Provided by

- The Bank of Fukuoka, Ltd.
- The Bank of Hiroshima, Ltd.
- The Dai-Tokyo Fire and Marine Insurance Company, Limited
- The Koa Fire and Marine Insurance Company, Limited
- Marine Midland Bank N.A., Tokyo Branch
- The Nippon Fire and Marine Insurance Company, Limited
- The Shikoku Bank, Ltd.

Agent

**The Sumitomo Bank, Limited**

## APPOINTMENTS

### Five directors for Scandinavian Bank

Five directors have been appointed to the board of SCANDINAVIAN BANK. They are: Mr Jacob Falstadsma and Mr Per Ake Harrison, managing director and deputy managing director respectively of Skandinaviska Enskilda Banken of Sweden; Mr Paavo Lahtinen, deputy chief general manager of the Union Bank of Finland; Mr Finn Strom-Gundersen, deputy managing director of Bergen Bank, Norway; and Mr Axel Rees, managing director of Skanska Banken of Sweden.

STANDARD CHARTERED BANK has promoted Mr C. W. G. Endacott, at present chief manager, The Chartered Bank, Singapore, to the rank of general manager from May 1. He becomes general manager (group personnel) in London from that date, in succession to Mr D. A. Weathersea who is retiring.

Mr Anthony Rescoe has been appointed managing director of THAMES INVESTMENT AND SECURITIES.

SCOTTISH BUSINESS IN THE COMMUNITY (SCOTBIC) has appointed two members to its governing council. They are: Mr Norman Starrock—vice president, Citibank Edinburgh and

Mr Graham Thomson—partner, Arthur Young McClelland Moores.

Mr Alan J. Harrison has been appointed general manager of the London branch of MULTIBANCO COMEREX, SNC. He was general manager of the bank's Singapore branch.

ROBERT MOSS has appointed Mr Dennis R. Stringer to the board as group marketing director. He was marketing manager,

Mr John D. Elliott has been appointed deputy chairman of BRIDGE OIL in place of Mr Maurice C. Timbs, who, at his own request, relinquishes that position but remains a director.

Mrs Christine R. Campbell, who has now become a full time executive of the company and has been appointed as general manager—international operations (non-technical), has resigned as a director, and

Mr Geoff F. Lord, who is a director of Elders IXL, has been appointed a director in her stead. Mr Frank P. Lewis and Mr John Saunders, joint managing directors of Westfield Holdings, have been appointed additional directors of Bridge Oil.

CHASE MANHATTAN, London-based merchant banking arm

of Chase Manhattan capital markets group, has appointed Mr Royal P. R. Mullin associate director—leasing and project finance. He was assistant treasurer with Burnham Oil.

Mr Terry Watkins—previously marketing director of the NORTHLEET GROUP, Gravesend, has been appointed managing director following the resignation of Mr Phil Search. Mr Watkins also joins the board of Maidenhead Finance, a subsidiary which specialises in leasing retail display equipment.

Mr Richard Stately, formerly with the Treasury and stockbrokers L. Messel, has been appointed an international economist with stockbrokers LAURIE MILBANK. His major areas of responsibility will be Germany, France and the Netherlands.

Mr Brian Hardy has been appointed to the board of CASTROL (a Burmah Oil company) as finance director. He is group financial controller of Uniqite and will join Castrol in July.

Mr John Nye, managing director of Split Fixings, has been re-elected chairman of the POW.

DER ACTUATED SYSTEMS ASSOCIATION, Mr Ian Findlay, managing director of Hill (Gt Britain) has been re-elected vice-chairman.

JOHN WALKER AND SONS has appointed Mr J. Stephen Campbell a director. He will continue as company secretary.

Mr T. E. Ashcroft has been appointed to the board of JOHN DEWAR AND SONS.

GENERAL FOODS CORP has elected Mr David Soffe, managing director of GF Limited in the UK, as a vice president of the corporation. This follows the recent appointment of Mr Soffe as GF's area director, Northern Europe in addition to his responsibilities in the UK.

Mr Mike Wheale has been appointed sales director of TI TOWER HOUSEWARES. He will be in charge of sales and marketing manager.

TREBOR has appointed three chief executives—at Trebor UK Mr Jack Thompson; at Moffat Mr Frank Reed; and at Trebor Group Distribution Mr Wallace Gairaud.

## CONTRACTS

### £6m North Sea work for Comex Houlder Diving

COMEX HOULDER DIVING, Aberdeen, has won contracts worth around £6m for the company's subsea inspection, construction and maintenance departments. In the inspection field, they cover inspection of platform and associated facilities for Conoco and the Murchison platform and associated facilities Heather installation. Work is being carried out using two Comex Houlder diving support vessels, the Comex at Murchison and the Uglard Comex 1 at Heather. In the southern North Sea, Comex Houlder is to undertake air diving and subsea construction work for pipework on Conoco's Victor gas field. The work will be carried out from Salpem vessels. Still in the southern sector, Comex Houlder has secured a contract for inspection work on three platforms in the West Sole gas field. The maintenance department has won a contract from BP for air diving and associated maintenance work in the Forties field. The diving team is being deployed from the BP diving support vessel, Sulair.

Begawan has been awarded a contract worth about £2m by the Brunel Shell Petroleum Company Berhad. The new company will provide the management personnel and equipment to carry out exhaustive quality assurance and non-destructive testing programmes on the numerous oil platforms in the Brunel offshore field. MAPEL YUSOF will also train Brunelians in the latest inspection and ndt techniques. MAPEL is part of AMEC.

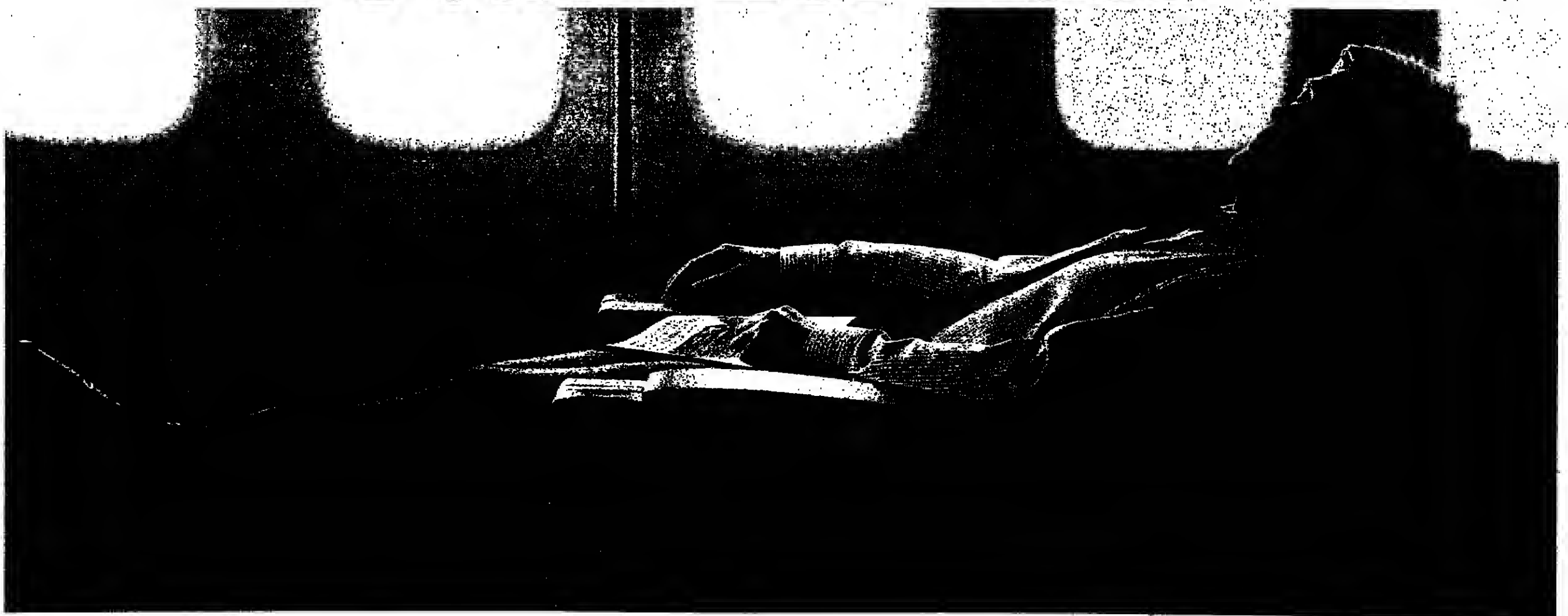
WESTINGHOUSE SYSTEMS, a Hawker Siddeley company, has been awarded the contract to supply a computer-based telecontrol system for the Yorkshire Electricity Board. Total value of the contract, including spares and sundry equipment, is £3.4m. The purpose of the telecontrol scheme is to collect data from 424 substations, and to provide supervisory and remote control facilities at each substation from the three regional control centres at Leeds, Sheffield and Hull. The first control centre equipment is scheduled for delivery and commissioning early in 1985, with the other two centres following a few months later.

A joint venture between METAL AND PIPELINE ENDURANCE of Hitchin and local group YUSOF Holdings of Bandar Seri

## BASE LENDING RATES

A.B.N. Bank	8 1/2%	Heritable & Gen. Trust	8 1/2%
Allied Irish Bank	8 1/2%	Hill Samuel	8 1/2%
Anro Bank	8 1/2%	C. Hoare & Co.	8 1/2%
Henry Ansbacher	8 1/2%	Hongkong & Shanghai	8 1/2%
Armed Trust Ltd.	8 1/2%	Kingdoms Trust Ltd.	10 1/2%
Associates Cap. Corp.	9 1/2%	Knowley & Co. Ltd.	8 1/2%
Banco de Bilbao	8 1/2%	Lloyds Bank	8 1/2%
Bank Hapoalim EM	8 1/2%	Mallinhal Limited	8 1/2%
BCCI	8 1/2%	Edward Manson & Co.	8 1/2%
Bank of Ireland	8 1/2%	Mecheril and Sons Ltd.	8 1/2%
Bank of Cyprus	8 1/2%	Midland Bank	8 1/2%
Bank of India	8 1/2%	Morgan Grenfell	8 1/2%
Bank of Scotland	8 1/2%	National Bk. of Kuwait	8 1/2%
Banque Belge Ltd.	8 1/2%	National Girobank	8 1/2%
Barclays Bank	8 1/2%	National Westminster	8 1/2%
Beneficial Trust Ltd.	8 1/2%	Norwich Gen. Tst.	8 1/2%
Bramar Holdings Ltd.	8 1/2%	People's Tst. & Sv. Ltd.	8 1/2%
Brit. Bank of Mid. East	8 1/2%	R. Raphael & Sons	8 1/2%
Brown Shipley	8 1/2%	P. S. Refson & Co.	8 1/2%
CL Bank Nederland	8 1/2%	Rosburgh Guarantee	8 1/2%
Canada Perm. Trust	8 1/2%	Royal Trust Co. Canada	8 1/2%
Castle Court Trust Ltd.	8 1/2%	J. Henry Schroder Wagg	8 1/2%
Carver Ltd.	8 1/2%	Standard Chartered	8 1/2%
Cedar Holdings	8 1/2%	TCB	8 1/2%
Charterhouse Japhet	8 1/2%	Trade Dev. Bank	8 1/2%
Chonlartons	10 1/2%	Trustee Savings Bank	8 1/2%
Citibank Savings	8 1/2%	United Bank of Kuwait	8 1/2%
Clydesdale Bank	8 1/2%	United Mizrahi Bank	8 1/2%
C. E. Conlon	8 1/2%	Volkskas Limited	8 1/2%
Comm. Bk. of N. East	8 1/2%	Westpac Banking Corp.	8 1/2%
Consolidated Credits	8 1/2%	Whiteaway Laidlaw	8 1/2%
Co-operative Bank	8 1/2%	Williams & Glyn's	8 1/2%
The Cyprus Popular Bk.	8 1/2%	Winttrust Secs. Ltd.	8 1/2%
Dunbar & Co. Ltd.	8 1/2%	Yorkshire Bank	8 1/2%
Duncan Lawrie	8 1/2%	Members of the Accepting Houses Committee:	
E. T. Trust	8 1/2%	7-day deposits 5.25%, 1-month 5%, fixed rate 12 months 5.25%	
Exeter Trust Ltd.	8 1/2%	5% £10,000, 12 months 5.25%	
First Nat. Fin. Corp.	11 1/2%	7-day deposits on sums of: under £10,000 5%, £10,000 up to £25,000 5%, £25,000 and over 7 1/2%	
First Nat. Secs. Ltd.	8 1/2%	Call deposits £1,000 and over 5 1/2%	
Robert Fraser	8 1/2%	21-day deposits over £1,000 5 1/2%	
Grindlays Bank	8 1/2%	Demand deposits 5 1/2%	
Guinness Mahon	8 1/2%	Mortgage base rate.	
Hambros Bank	8 1/2%		

# TWA First Class.



TWA Royal Ambassador Service in First Class is in a class of its own.

It's dedicated to giving you the most restful, relaxing and luxurious flight across the Atlantic.

We make sure it starts right, with boarding cards and seat reservations before you go to the airport. We make sure you have a comfortable

## Lie back and enjoy it.

First Class lounge at the airport.

Then we make sure your flight will be perfect. Lie back and enjoy our soporific Sleeper-seats. Sit up and appreciate a leisurely meal of superb food and wines, served in the style of a first class restaurant.

Everything about TWA First Class travel is designed to make your flight comfortable and trouble-free.

And, if you're flying to New York, you'll find our free helicopter service ready to take you into Manhattan. We want you to enjoy every moment.



You're going to like us





THE ARTS

Television/Christopher Dunkley

Some fresh air at last on Channel Four

Amid the endless columns of the television schedules... Some fresh air at last on Channel Four... The launch of the channel was preceded not by some vague suggestion that it might be different but by an insistent nationwide PR campaign...

plausibly racial distinction. They are certainly "different" even though the woman in charge of them claims they are no different from programmes for keep fit fanatics, bridge players, or current affairs buffs... But Jesus: The Evidence and Diverse Reports really are different in quite important ways from what we have come to expect on British television...



Jeremy Brett (left) is the latest actor to play Conan Doyle's Baker Street detective in "The Adventures of Sherlock Holmes" which started on ITV last night. The eternally puzzled Dr Watson is David Burke

religion as the opium of the people; not a function to be eschewed necessarily by a modern mass medium, however appalling some of us may find it. But television's other function, that in the world of journalism, as a seeker after facts and powerful primary conveyor of those facts to the public, has been virtually ignored so far as religion is concerned...

geographical chance, and they would also have to admit that they had not studied the holy books of other religions in order to discover the most convincing, but that is another matter. This being so it is surely right that he should investigate the truth or otherwise of what The Bible says, so far as we are able, yet television has rarely done any such thing, and never — so far as I know — systematically. Jesus: The Evidence was an attempt by David Rolfe and Julian Norridge to do it in three hours. It is a pity they did not have 10 more episodes. It is a shame that the "dramatised" hits of business were so awful (the discovery of the Gnostic Gospels looked like something by Wilson, Keppell, and Betty the "exploding" status of Christ was silly, the bloody pictures of crucifixion and Christian martyrdom were sensation-mongering) and it is unfortunate that there wasn't a tough old Fleet Street sub-editor on hand to knock the script into more coherent shape. Yet it was still a commendable and valuable effort as the response of "believers" has proved. The reactions to the series have been almost more interesting than the programmes themselves. The first response of those with what they call "faith" is to say that of course everybody already knew that the Gospels were written decades after the event and not by eye witnesses, and that the main points in the Christ story — from virgin birth to resurrection via the miracles — are common to several pre-Christian myths and religions. Yet it seems very doubtful whether most viewers do know such things, and it is just as important that today's major mass medium, television, should publicise such facts as it was that Italy's 17th-century mass medium, print, should publicise Galileo's proof of the Copernican theory which said that the earth moved round the sun. The hostility shown to Jesus: The Evidence reeks of the same intolerant fear of facts shown by the Inquisition when they threatened Galileo with the rack in order to force him to recant from his fearful heresy. The earth going round the sun indeed! Next they'll be saying that Jesus was simply a Jewish hypnotist. It is contrary thinking of Galileo's sort — non-conformism — which has brought man at such extraordinary speed up off his haunches, out of the caves, and away into space, and it is contrary thinking of that sort which television has so signally lacked. Owing to scarcity of channels there has been an understandable tendency to represent and even support what has been seen as the middle ground and the status quo. While newspapers and books could offer all sorts of attitudes, television was obliged to stick to something called "objectivity" which may be a good worth aiming for, despite its inaccessibility. The strivers towards objectivity are, rightly enough, still around, but now with Diverse Reports in its new incarnation television has grown up in a large variety of attitudes. In the past few weeks Ferdinand Mount has reported on the case for private bus services. Christopher Egan has explained the idea of a Labour/SDP pact to avoid splitting the left wing vote at the next election. Paul Johnson has put the case against subsidising the arts. A black American who may perhaps have been a Friedmannite monetarist argued that the welfare state, the unions and the race relations industry all act against the ultimate interests of black people. And a woman has tried to show that cancer of the cervix is not connected with promiscuity. Moreover the programme's own reports have openly taken up positions on such matters as "low sugar" risks for babies (more sugar per gram than doughnuts) and the Charity Commissioners ("not only is the law out of date, but the Charity Commission is clearly not up to the job of enforcing it"). Even two swallows may not make a summer, but the little patch of blue is clear now and it looks as though Channel 4 may be straying its spring.

Radamisto/Radio 3

Stanley Sadie

Among Handel's operas Radamisto occupies a special place, as the first he wrote, in 1720, for the Royal Academy of Music. It was not his first London opera (that was Rinaldo, nine years before), but the one designed to inaugurate his contribution as house composer to the organisation designed — pious hope! — to put London's operatic life on a secure basis, financial and administrative. "Few of Handel's operas would offer more amusement to a modern audience than Radamisto, in which there are so many fine songs in various styles and its intrinsic worth and Handel's still increasingly celebrity would excite attention and renovate its favour." Those were Charles Burney's words, in 1789. They may stand. Radamisto has not, I believe, been revived since the Handel Opera Company's production seen in 1960 and 1962. The plot is contrived but does what is asked of it: it provides opportunities for music in a large variety of situations. The central couple, Radamisto and his wife Zenobia, are threatened by the Armenian King Tiridates' unruly desire for her. There is a superb sequence in the last act: a pledge of fidelity to the imperilled Radamisto, counterpointed with woodwind; a furious outburst from Tiridates' wife, Polissena, voice and violin vying in energetic expression; an assertive aria with horns for Tiridates (one of their earliest appearances in opera); and a pathetic prayer with solo cello, interspersed with enraged explosions, for Zenobia. Earlier there is a brilliant trumpet aria. The whole opera is richly orchestrated. Sunday's BBC performance at first struck me as curiously old-fashioned. The orchestra was the English Chamber — no period instruments, so textures much more dense and sustained than we have become used to;

the bass-line especially seemed thick, and occasionally leaden. The performance was planned with the late Sir Anthony Lewis, who unhappily died before it was recorded; possibly it represented his outlook more than that of Roger Norrington who in the event conducted. There were some moments of unsure ensemble and two or three puzzling tempos early on, but it was generally sound in style and sensibly paced. What we might reckon really astonishing — do we take too much for granted? — is the superb quality of English Handel singing at present. Ten years ago here, or anywhere else in the world, such a level as this would be unimaginable. The cast was headed by Janet Baker, virtually at her best; the elegant F minor aria in Act 2, even though Mr Norrington embarked on it rather fast, had all her characteristic intensity, and in an earlier one she spat out her semi-quavers in due expression of her contempt for an "empio tiranno." This is one of two male roles originally composed for a woman; the other, Tiriganes, was taken by Lynda Russell and delivered in a fluent and most musical manner. Della Jones as Zenobia was a precision and urgency equally well served; I admired the fire in her Act 1 aria and the passionate phrasing of the one in Act 2 with oboe that so resembles the one in L'Alcina. There were some pleasingly fresh light singing from Patricia Kwella, even if a castrato role like Fraaartes is not quite right for her. Eiddwen Harry was in strong, glittering voice as Polissena, at her best competing with the solo viola. Malcolm King made an excellent elder statesman as the King of Thrace, and Martyn Hill did pretty well in the wicked Tiridates' rigorous arias, but whose especially in the caressing music of the one in Act 2.

Howard Jones, Hammersmith

Antony Thornecroft

Pop idols come in all imaginable shapes and sizes, but this year it is fashionable to be small. Two names that have burst from nowhere, or rather from Ipswich and High Wycombe, on to the walls of Jim, teenage, girls', bedrooms, Nik Kershaw and Howard Jones, are both wisps of lads. Not so much in age, though; they are considerably older than their supporters and sometimes give the impression that they would have preferred the adulation of a more sophisticated clientele. But business is business, and on Monday night at the Hammersmith Odeon Jones was quite willing to mix it with his fans, leaping into the audience to be lost in an orzy of hand touching. Perhaps the most surprising feature of Howard Jones's success is that it is built around a synthesiser, a contrivance that should by now have programmed itself out of existence. By mixing his tapes before the concert Jones can give the controls a few key notes and then pop around the stage, leaving the machine to churn out the music. Even though it is a very impressive circular synthesiser — at the end it revolves and flashes out lights — and gives the impression that Jones is controlling single handed the power supply for most of the south of England one man and his machine rarely make for continuous visual excitement. Jones does his best in his white

music; one of those mikes that is fixed to the face like a tooth brace, and phosphorescent light in his hair, in multi-coloured hair, but just in case the attention wanes he has a dancer, Jez, who mimes and contorts to some of the songs. Apart from his cheerful, positive approach it is Jones's ability to devise catchy simple riffs that has powered his debut album to the top of the charts. His latest hit "New song" is ridiculously uncomplicated and in fact leaves the audience to holler out responses; there is no reason why it should ever end. He closed his act with another ruffian and the other sound "What is love," which irritates by its infectiousness. But Jones is obviously a talented keyboard player and his rare excursions actually playing the piano with an almost Joni Mitchell plaintiveness were the musical treats of an evening which just edged the right side of the boredom threshold. And sometimes even the dread appearance of Jez was diverting, notably on "Equality," in which, with half his body, and the other half punked, he expressed physically a good song and made it more than a synthetic musical blep. When Jones tries to communicate verbally rather than through music or his appearance he comes apart; there was a banal attempt to explain the "story" behind the cover of his album. But as pop idols go Howard Jones goes further than most in musical appeal.

New York Theatre/Frank Lipsius

Coming of age on and off Broadway

As the "me" generation grapples with the real world, it generates bestselling books like When Bad Things Happen to Good People, and equally sentimental but surprisingly varied plays like To Gillian on her 37th Birthday and A... My Name is Alice. To Gillian is a play that has made it to Broadway, the off-off Broadway venue in the riverfront warehouse district. The first, Open Admissions, made the mistake of taking the lead in Broadway where a superb production of Shirley Laura's interesting review of 1960s do-goodism could not find a large enough audience to sustain it. To Gillian wisely chose to open off Broadway at the Circle in the Square Downtown, where its sentimental view of the premature death of a young mother has made it the season's theatrical Terms of Endearment. Playwright Michael Brady cannot change the scene, well wrought as it is in Robert Thayer's sandy and convincing New England clapboard summer setting. The three key characters, a father, daughter and her close friend, have useful, and sometimes moving conversations, usually in pairs. The more people who meet together, the worse the dialogue becomes, as characters

with sincere if sentimental thoughts become caricatures of themselves in the presence of a crowd. While Open Admissions got better in this transition to Broadway, To Gillian could only have got worse. I did not see the original, but this production suffers from the typical disease that happens to plays stretched from one act to two. It got full of characters the playwright tried to make interesting while they remain superficial. Individually, some of the best acting comes out of the peripheral characters, like Fern de Baer as the psychologist aunt Esch, and her husband, Paul. But the main characters — David Rasche as David, Noelle Parker as Cindy and Sarah Jessica Parker as Rachel — carry the best of Michael Brady's script, where he expatiates — eloquently — on a subject derived from the same sources as When Bad Things Happen to Good People. Gillian herself, a ghost only the husband can see, is played by an attractive-looking Cheryl McAdden, who does the best she can with an impossible role. Clear is the perfect woman until her attributes suddenly sound more pretentious than attractive. A romantic anthropologist, she abandoned her

family to live in Africa and died in a fall from a boat mast, where her daughter notes, she probably should not have been in the first place. The playwright recognized how crucial it was to make Gillian attractive, but just made her a caricature of the 1960s he-woman, a breed that gets a much less idealised portrait in A... My Name is Alice. Joan Micklin Silver, who directed the movie Hester Street before working in professional theatre, has turned her considerable talents to unusual musicals, which might be thought of as the live version of video cassettes. An earlier venture put imaginative scenes to Randy Newman songs, after Ms Silver saw how playwright David Rimmer effectively integrated Beatles songs into his play Alice, which she directed. A... My Name is Alice looks at the lot of woman circa 1984 and finds reasons to sympathise (what the women would more likely call "empathise"), chide and encourage. After the Beatles and Randy Newman, Ms Silver (with her co-director Julianne Boyd) knows a good song when she hears one, and here has picked an assortment from excellent writers, including Mark Saitzman and Stephen Lawrence, David Zippel and Doug Katsaros. The scenes are varied and telling: a kindergarten teacher rebukes a neglectful mother who is a preoccupied executive, while a teenager and a middle-aged woman share a sad and anxious song about waiting for a date. The songs touch raw nerves enough to hurt but clever enough to laugh at, too. The excellent cast of Rod Brown, Randy Craft, Mary Gordon, Murray, Aislinn Reed and Charlaune Woodard have taken the musical from a well-received tryout at the American Place to a home at the Village Gate. The Circle in the Square's uptown revival of Clifford Odets' Awake and Sing! is a reminder that radical politics and sentimentality are far from incompatible. If the play is to

be believed, sentimentality is almost the wellspring of radicalism, despite a patina of tough talk and rigorous, if wrong, analysis. Misguided idealism makes the playwright seem as callous to character as a government letting people starve to death. Characters lapse into banal stereotypes that actors as accomplished as Nancy Marchand, Thomas G. Waites, and Michael Lomhard cannot rescue from singsongy platitudes. These Depression-hit family members seem less like a family than a car full of New York subway straphangers turning one generation's politics into another's sentimentality.

the team from A... My name is Alice

King Lear/Stockholm

Ossia Trilling

After eight years in the wilderness, Ingmar Bergman has returned to his former hunting ground in Stockholm with a production of Shakespeare's King Lear that has given his colleagues and audiences at the Royal Dramatic Theatre the treat of a lifetime. With the help of a new, easy-to-understand translation by the poet Britt G. Hallqvist, and a stunning decor, sets and costumes by Gunilla Palmstjerna-Weiss, Bergman has again proved himself to be Sweden's most gifted theatrical director. Bergman has used the tragedy of blind despotism as a lesson to those who, dressed in a little brief authority, bungled the "Bergman affair." Wrongly accused of tax evasion, Bergman took umbrage and chose voluntary exile after a nervous collapse, despite an official retraction and apology. Eight years later, he is back with a vengeance to strike a moral blow against all usurpers of power and destroyers of mankind. That is the lesson of his King Lear, which carries three clues in the text. The first clue lies in the "world of fools" that Bergman brings to life in a 15-minute prologue on an open stage, empty except for a blood-red back wall (recalling his Hedda Gabler). On it some 70 players, clowns, mimes, singers and medieval mountebanks dance and tumble, while Lear and his retinue go through the paces of a stately pavane to Daniel Bell's courtly music.

The cast is mobilized the whole evening, with extras taking up positions on the forestage as observers. Courtiers and servants wearing various shades of red, or soldiers in black, act as footstools, chairs, walls, a throne, or a frieze. The second clue, "more sinned against than sinning," explains Lear's irrational behaviour. Many of Bergman's familiar obsessions are brought into play; the play within the play, the worlds of religion and sex; the lust for power and earthly possessions. Strangely, this world is reminiscent of Strindberg's A Dreamplay and of Ibsen's daughter's cry of sympathy for suffering mankind. Lear's crown, cast aside and spilt down centre-stage, sets the tone — lying untouched except by Jan Olof Strindberg's whimsical Fool, who accidentally stubs his toe on it. It is possible to follow the text in the programme, where every cut and transposition is marked. How odd to find Lear's storm-scene monologue largely cut! His distressful agony appears, however, in the remaining dialogue and in the tape of a searing wind, baritone of a different sort of catharsis. The final clue comes when Edgar speaks the last lines of the tragedy. He and Albany draw swords and exit, sworn enemies, as a shattering explosion brings the entire paraphernalia of the stage crumbling to the ground. Bergman's vision of Doomsday could not be more telling.

Arts Guide

April 20-26

Muscle/Monday. Opera and Ballet/Tuesday. Theatre/Wednesday. Exhibitions/Thursday. A selective guide to all the Arts appears each Friday.

Theatre

TOKYO

Cats (Cats Theatre). The specially built steel theatre, excellent set, good dancing and Kabuki-origami movement all make the Japanese version worth seeing. Shiki company, directed by Keita Asari. (324 081). Kabuki: Muzumushi, Sonetaki Shinju or Double Suicide at Sonzaki (Kabukiza). One of Chikamasa's most famous plays based on a true incident. English programme details, simultaneous earphone commentary. (5413131). Kabuki: Go-hiki Tsunagi Uma, or Pulling the Tethered Horse (Mitsuzasa). This production is reputed to have cost ¥10m (\$44,000) and tells the story of a man who disguises himself as various warriors, and a spider in order to avenge his father's death. (6675151). LONDON Starlight Express (Apollo Victoria). Andrew Lloyd Webber's new musical is a roller rink spectacular with obvious debts to Spiefberg, Disney, Star Wars, Dolly Parton and so on. Trevor Nunn's production is for the children of most ages, with the human rock and rolling stock trains racing around the transformed theatre like body-popping ethereal robots. Designs by John Napier, lighting by David Hervey. (8349184). Eyre's fine production returns to the National Theatre for a few summer months before possibly moving into the West End. The new principals

include Andrew C. Wadsworth as Sky Masterson. The revival has been rumbled back as the unlamented Jean Seberg was rocking the boat. (222222). Benefactors (Vaudeville). Disappointing new Michael Frayn play about two interlocked married couples whose design for living is threatened by the high rise developments in early 1970s London. Outstanding performance by Brenda Blethyn as a discouraged housewife. Michael Blakemore director. (838 943). Stage: Intestines (Duke of York's). Claudia Jackson leads a revival of Eugene O'Neill's five-hour Pulitzer prize-winning Freudian drama. The play — first and last seen in London in 1941 — blends in terror monologue with powerful scenes of insanity, retribution and despair. Keith Black director, cast includes Edward Petheridge, James Hazeldine, Brian Cox. (381122). Pines Play (Wyndham's). Deserved revival of Peter Nichols's experimental monosyllabic comedy, with Barry Foster, Leslie Phillips, Zena Walker and Judy Parfitt. (838 9229). Love (Ambassadors). Leonard Rossiter is a wonderful Truscott in Jonathan Lynn's enjoyable revival of Joe Orton's farce in which a leading role is played by a mummified corpse. The versatile Gemma Cavan plays the Irish nurse who is open to offers and party to crime. (8361171). The Aspern Papers (Haymarket). Vanessa Redgrave and Wendy Hiller give superb performances in Michael Redgrave's 1989 version of Henry James's story. The inquisitive scholar who descends on their Venetian palazzo is played, ponder-

ously, by Christopher Reeve. (930 9822). A Streeter Named Desire (Marmalade). Sheila Gish gives the performance of her life as Blanche Dubois in Al-an Strachan's excellent revival, first seen last year at Greenwich. Tennessee Williams's emotional roller-coaster of a play amounts to one of the best evenings in town. (836 6122). Little Shop of Horrors (Comedy). Campy off-Broadway import which is less good than The Rocky Horror Picture Show but which has a curious charm. Full-blown performance from Ellen Greene and an exotically expanding man-eating prickly plant. (930 2578). Pack of Lies (Lyric). Just Dunch in a decent, entertaining play about the breaking of a spy ring in the suburban Ruslip of 1958-60. Hugh White-more's script cleverly constructs a drama about betrayal from the friendship of neighbours. The story is based on fact and well directed by Clifford Williams. (437 9888). The Real Thing (Strand). Susan Penhaligon and Paul Shelley now take the leads in Tom Stoppard's fascinating, complex, slightly dazed new play. Peter Wood's production strikes a happy note of serious levity. (838 2660/4143). Daisy Pulls It Off (Globe). Enjoyable romp derived from the world of Agatha Christie novels: gym slips, hockey sticks, a cliff-top rescue, stout moral conviction and a rousing school hymn. Spiffing if you're in that sort of mood. (437 1382). Noises Off (Globe). The funniest play yet by a large chorus line. (977 9029). 42nd Street (Majestic). An immediate celebration of the heyday of Broadway in the '30s incorporates gems

from the original film like Shuffle Off To Buffalo with the appropriately brash and leggy booming by a large chorus line. (977 9029). Torch Song Trilogy (Hayes). Harvey Fierstein's ebullient and touching story of a drag queen from backstage to loneliness incorporates all the wild hairdos in between, down to the confrontation with his dotting Jewish mother. (944 9450). Dreamgirls (Imperial). Michael Bennett's latest musical has now become a stalwart Broadway presence despite the forced effort to recreate the career of a 1960s female pop group, a La Supremes, without the quality of their music. (246 8200). Nine (4th St). Two dozen women surround Sergio Franchi in this Tony-award winning musical version of the Fellini film 9½, which like the original celebrates creativity, here as a series of Tommy Tune's exciting scenes. (246 9245). Cats (Winter Garden). Still a sellout, Trevor Nunn's production of T. S. Eliot children's poetry set to trendy music is visually startling and choreographically felicitous, but classic only in the sense of a rather staid and overblown idea of theatricality. (238 6292). La Cage aux Folles (Palace). Perhaps this season's outstanding musical comes, like Evita and Cats before it, at the very beginning of the theatrical year. Despite stellar names such as Harvey Fierstein writing the book and Jerry Herman the music, the best parts of the show are not the hoopla, apart from the first-act Rinaldo e la Gaité Parisienne, but the intimate moments borrowed direct. An immediate celebration of the heyday of Broadway in the '30s incorporates gems from the original film like Shuffle Off To Buffalo with the appropriately brash and leggy booming by a large chorus line. (977 9029). 42nd Street (Majestic). An immediate celebration of the heyday of Broadway in the '30s incorporates gems

from the original film like Shuffle Off To Buffalo with the appropriately brash and leggy booming by a large chorus line. (977 9029). Torch Song Trilogy (Hayes). Harvey Fierstein's ebullient and touching story of a drag queen from backstage to loneliness incorporates all the wild hairdos in between, down to the confrontation with his dotting Jewish mother. (944 9450). Dreamgirls (Imperial). Michael Bennett's latest musical has now become a stalwart Broadway presence despite the forced effort to recreate the career of a 1960s female pop group, a La Supremes, without the quality of their music. (246 8200). Nine (4th St). Two dozen women surround Sergio Franchi in this Tony-award winning musical version of the Fellini film 9½, which like the original celebrates creativity, here as a series of Tommy Tune's exciting scenes. (246 9245). Cats (Winter Garden). Still a sellout, Trevor Nunn's production of T. S. Eliot children's poetry set to trendy music is visually startling and choreographically felicitous, but classic only in the sense of a rather staid and overblown idea of theatricality. (238 6292). La Cage aux Folles (Palace). Perhaps this season's outstanding musical comes, like Evita and Cats before it, at the very beginning of the theatrical year. Despite stellar names such as Harvey Fierstein writing the book and Jerry Herman the music, the best parts of the show are not the hoopla, apart from the first-act Rinaldo e la Gaité Parisienne, but the intimate moments borrowed direct. An immediate celebration of the heyday of Broadway in the '30s incorporates gems from the original film like Shuffle Off To Buffalo with the appropriately brash and leggy booming by a large chorus line. (977 9029). 42nd Street (Majestic). An immediate celebration of the heyday of Broadway in the '30s incorporates gems

from the original film like Shuffle Off To Buffalo with the appropriately brash and leggy booming by a large chorus line. (977 9029). Torch Song Trilogy (Hayes). Harvey Fierstein's ebullient and touching story of a drag queen from backstage to loneliness incorporates all the wild hairdos in between, down to the confrontation with his dotting Jewish mother. (944 9450). Dreamgirls (Imperial). Michael Bennett's latest musical has now become a stalwart Broadway presence despite the forced effort to recreate the career of a 1960s female pop group, a La Supremes, without the quality of their music. (246 8200). Nine (4th St). Two dozen women surround Sergio Franchi in this Tony-award winning musical version of the Fellini film 9½, which like the original celebrates creativity, here as a series of Tommy Tune's exciting scenes. (246 9245). Cats (Winter Garden). Still a sellout, Trevor Nunn's production of T. S. Eliot children's poetry set to trendy music is visually startling and choreographically felicitous, but classic only in the sense of a rather staid and overblown idea of theatricality. (238 6292). La Cage aux Folles (Palace). Perhaps this season's outstanding musical comes, like Evita and Cats before it, at the very beginning of the theatrical year. Despite stellar names such as Harvey Fierstein writing the book and Jerry Herman the music, the best parts of the show are not the hoopla, apart from the first-act Rinaldo e la Gaité Parisienne, but the intimate moments borrowed direct. An immediate celebration of the heyday of Broadway in the '30s incorporates gems from the original film like Shuffle Off To Buffalo with the appropriately brash and leggy booming by a large chorus line. (977 9029). 42nd Street (Majestic). An immediate celebration of the heyday of Broadway in the '30s incorporates gems

from the original film like Shuffle Off To Buffalo with the appropriately brash and leggy booming by a large chorus line. (977 9029). Torch Song Trilogy (Hayes). Harvey Fierstein's ebullient and touching story of a drag queen from backstage to loneliness incorporates all the wild hairdos in between, down to the confrontation with his dotting Jewish mother. (944 9450). Dreamgirls (Imperial). Michael Bennett's latest musical has now become a stalwart Broadway presence despite the forced effort to recreate the career of a 1960s female pop group, a La Supremes, without the quality of their music. (246 8200). Nine (4th St). Two dozen women surround Sergio Franchi in this Tony-award winning musical version of the Fellini film 9½, which like the original celebrates creativity, here as a series of Tommy Tune's exciting scenes. (246 9245). Cats (Winter Garden). Still a sellout, Trevor Nunn's production of T. S. Eliot children's poetry set to trendy music is visually startling and choreographically felicitous, but classic only in the sense of a rather staid and overblown idea of theatricality. (238 6292). La Cage aux Folles (Palace). Perhaps this season's outstanding musical comes, like Evita and Cats before it, at the very beginning of the theatrical year. Despite stellar names such as Harvey Fierstein writing the book and Jerry Herman the music, the best parts of the show are not the hoopla, apart from the first-act Rinaldo e la Gaité Parisienne, but the intimate moments borrowed direct. An immediate celebration of the heyday of Broadway in the '30s incorporates gems from the original film like Shuffle Off To Buffalo with the appropriately brash and leggy booming by a large chorus line. (977 9029). 42nd Street (Majestic). An immediate celebration of the heyday of Broadway in the '30s incorporates gems

from the original film like Shuffle Off To Buffalo with the appropriately brash and leggy booming by a large chorus line. (977 9029). Torch Song Trilogy (Hayes). Harvey Fierstein's ebullient and touching story of a drag queen from backstage to loneliness incorporates all the wild hairdos in between, down to the confrontation with his dotting Jewish mother. (944 9450). Dreamgirls (Imperial). Michael Bennett's latest musical has now become a stalwart Broadway presence despite the forced effort to recreate the career of a 1960s female pop group, a La Supremes, without the quality of their music. (246 8200). Nine (4th St). Two dozen women surround Sergio Franchi in this Tony-award winning musical version of the Fellini film 9½, which like the original celebrates creativity, here as a series of Tommy Tune's exciting scenes. (246 9245). Cats (Winter Garden). Still a sellout, Trevor Nunn's production of T. S. Eliot children's poetry set to trendy music is visually startling and choreographically felicitous, but classic only in the sense of a rather staid and overblown idea of theatricality. (238 6292). La Cage aux Folles (Palace). Perhaps this season's outstanding musical comes, like Evita and Cats before it, at the very beginning of the theatrical year. Despite stellar names such as Harvey Fierstein writing the book and Jerry Herman the music, the best parts of the show are not the hoopla, apart from the first-act Rinaldo e la Gaité Parisienne, but the intimate moments borrowed direct. An immediate celebration of the heyday of Broadway in the '30s incorporates gems from the original film like Shuffle Off To Buffalo with the appropriately brash and leggy booming by a large chorus line. (977 9029). 42nd Street (Majestic). An immediate celebration of the heyday of Broadway in the '30s incorporates gems



FINANCIAL TIMES

BRACKEN HOUSE, CANNON STREET, LONDON EC4A 3DF  
Telegrams: Finantimo, London PS4, Telex: 8954871  
Telephone: 01-248 8000

Wednesday April 25 1984

Soviets play a waiting game

THE SOVIET UNION has just dealt a double rebuff to two Western arms control initiatives, one on banning chemical weapons and the other on reducing the numbers of troops and their conventional weapons in central Europe. Moscow clearly calculates that it has nothing to lose by denying President Reagan during his re-election bid a successful arms negotiation to brandish before his electorate, and everything to gain from heightening tension further in Europe and trying to push NATO governments into concessions.

But by stonewalling so bluntly in the only two arms control negotiations in which it is still involved—since it walked out of the nuclear arms talks last autumn—the Kremlin now runs the clear risk of doing fatal injury to the "peace" image it has so assiduously tried to cultivate in the West.

A policy for UK airlines

BRITISH AIRWAYS has been overwhelmingly dominant in the UK airline industry as a result of historical accident and government policies rather than of commercial prowess. This is the central theme of a new analysis of airline competition policy published by the Civil Aviation Authority.

As things stand, BA enjoys a total monopoly on all international scheduled services by British airlines from Heathrow— which is, by far, Britain's most attractive and popular airport. Even at Manchester, the main airport outside London, BA is almost supreme.

The general thrust of the report is that BA's market power needs somehow to be reduced before privatisation. But how? The main problem is to ensure that greater domestic competition does not damage the British industry's ability to compete abroad.

first, excluding service support forces (the Warsaw Pact apparently has more bottle-washers and their ilk in uniform) and, second, to accept a certain discrepancy in troop counts.

It can be argued that the chemical weapons and MBFR talks are essentially peripheral to the far more pressing concerns about nuclear arsenals. MBFR has been in stalemate for a decade—so why worry about a few more years?

Though the Easter holiday has opened the season for this year's bigger anti-nuclear demonstrations in Western Europe, there seems very little likelihood that NATO will reverse its long-standing policy of the simple reason that the U.S. negotiations with Moscow over these weapons are dead.

Concession

The second Soviet criticism—about the proposal which NATO tabled in Vienna—has been a balanced force reduction (MBFR) talks in Vienna—has been less force. The Kremlin has complained, through Pravda this time, that the NATO plan reflects "not even the semblance of an intention to bridge the disagreement over Nato and Warsaw Pact troop levels which has stalled MBFR for the past 10 years.

It seems unlikely, then, that anything very drastic can be done to allow existing private operators greater access to BA's international routes—highly competitive on the North Atlantic, highly cartelised to most other destinations. The press policy of the CAA, encouraging a gradual increase in indirect competition—for instance, in allowing BCal a route to Riyadh, competing with BA's services to other Saudi destinations—will probably be continued.

However, the real core of the problem is how to ensure that the privatisation of BA helps rather than hinders the introduction of real competition where it is lacking at the moment—internally, and in Europe, should the EEC Commission eventually get its way by imposing the competition articles in the Treaty of Rome.

THE BUSINESS CAR MARKET

Montego: a vital new link in the BL revival plan

By Kenneth Gooding, Motor Industry Correspondent

HIGH IN the hills behind Nice, in the South of France, two British salesmen and their wives taking an early holiday stumbled accidentally into the middle of the Press presentation of Austin Rover's new car, the Montego.

They were favourably impressed by the car, a conversational saloon with a big boot, which Austin Rover slots into its range, between the Maestro and the Rover, from today.

The reaction of the salesmen is significant because they are typical of the hundreds of Austin Rover dealers who are seeking for the Montego, a member of the same "family" of models as the Maestro—a family developed and brought into production at the cost of £10m.

The Montego is the latest important link in the "product-led" revival of BL's car business which began with the Metro, introduced in 1980, and was reinforced by the Maestro, launched just over a year ago.

It was on these cars that Sir Michael Edwardes, the former chairman, based the recovery plan that is designed to make Austin Rover profitable by the mid-1980s. The company seems to be on target for this.

Figures released last week show Austin Rover made a £2m profit at the operating level in 1983, compared with a 1982 loss of £10.3m.

Sir Michael would have liked the Montego to have started the programme because it gives Austin Rover the opportunity to capture a substantial share of the company car fleet with the Metro was too far advanced when he arrived at BL for such a major change of plan.

These are the two cars the Montego must catch if it is to succeed. But it will not be easy. The American rivals are already locked in a tremendous battle for British customers.

Rover's chairman, says: "Metro was the key to our survival. Maestro was the key to our success. Montego is the car which opens the door to the largest and most important sector of the European market."

However, the truth is that Montego is very much aimed at the British market, rather than the rest of Europe where Austin Rover is still struggling to re-establish itself.

The new car's main rivals in Europe include the Sierra, the Cavalier, the Audi 80, Volkswagen Passat and Renault 205. The car is aimed squarely at the so-called upper medium sector of the market, which accounts for more than a quarter of total sales throughout Western Europe.

The sector has another important characteristic: even though the cars are company purchases, over half will be driven by employees who have a say in the choice of model their organisation chooses.

As it was, work on the Metro was too far advanced when he arrived at BL for such a major change of plan. Instead it was General Motors' Vauxhall-Opel subsidiary that broke dramatically into the market with its Cavalier, which now competes with Ford's Sierra as the most popular model with UK business buyers.

These are the two cars the Montego must catch if it is to succeed. But it will not be easy. The American rivals are already locked in a tremendous battle for British customers.

Austin Rover is hoping that the Montego will quickly push up the company's UK car market share from 18.5 to well over 20 per cent—a figure it last held in 1978.

The launch of the Montego will enable Austin Rover to complete the £147m re-equipment of the Cowley, Oxford, assembly plant, placing it alongside the company's other facilities at Longbridge, Birmingham (home of the Metro), as one of the most efficient in Europe.

After all, it's British and it's our money. If it succeeds we all benefit."

Mr Geoff Beque, marketing director of Interleasing, which operates a fleet of 12,500 cars under contract hire and leasing schemes, says his company will buy 30 Montegos a month. That compares with about 140 Sierras and 120 Cavaliers purchased for Interleasing clients.

He maintains: "I think there is a pent-up demand from fleet users to buy British where they can—and that means buying from Austin Rover. As long as they can put it together correctly and it is reliable Montego will do well. I would not be surprised if Montego took one-third of the business sector eventually."

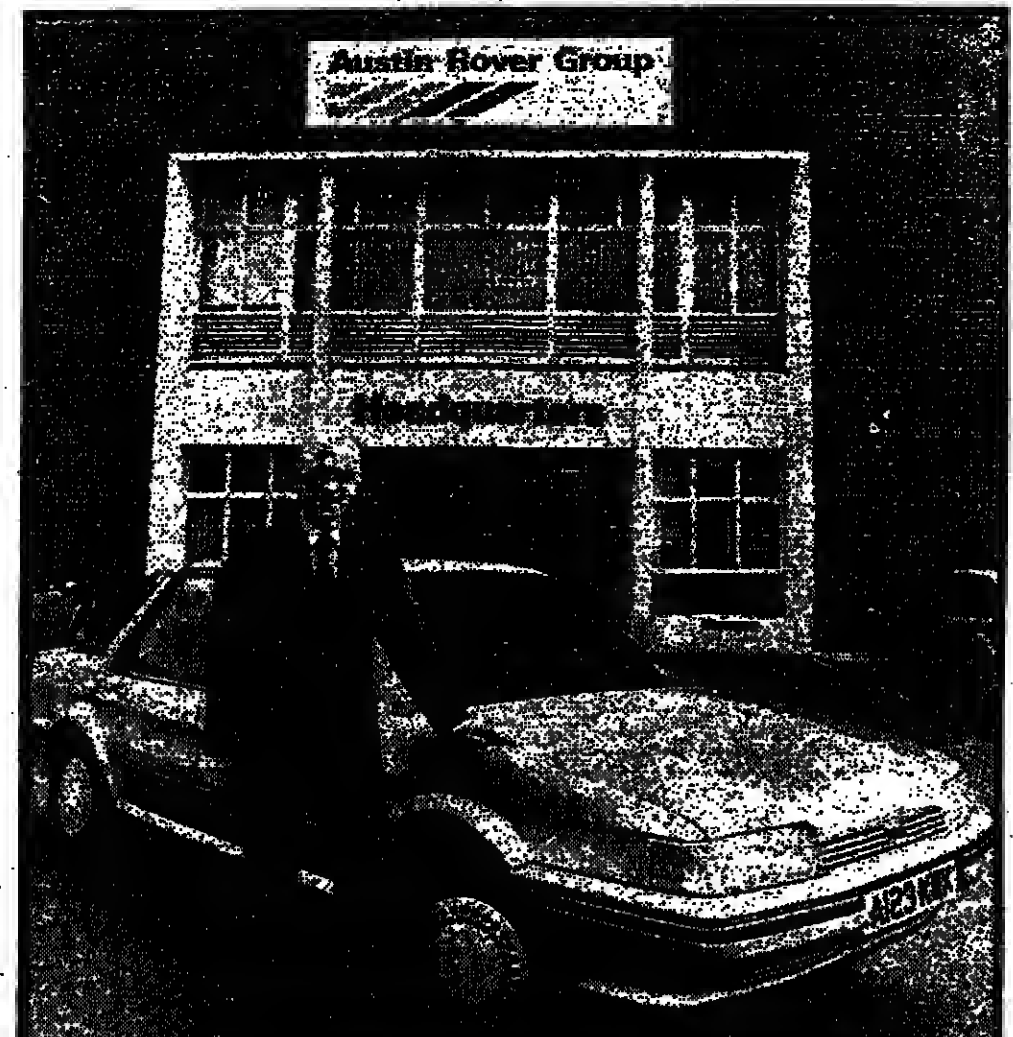
All the fleet executives stressed that Montego would have to be absolutely reliable if it was to capitalise on the "buy British" sentiment.

Mr Musgrove believes Austin Rover's car output from its two plants could therefore reach nearly 500,000 in 1984, up 13 per cent on 1983. He says that by the end of 1986, when the group will have given the Metro—produced at Longbridge, Birmingham—a substantial "facelift" and the joint-venture car developed with Honda, the JX, will be on stream, production will be running at an annual rate of 600,000.

But Mr Musgrove insists that he will not be chasing volume and market share unless it can be achieved profitably.

He says: "Montego will be good for our image both at home and on the Continent. But the most important boost for Austin Rover would be if customers could believe it is the company with a future and that it has a future which will be profitable."

"We need profit not only to pay for the next generation of cars, we need profit for the sake of our image."



Mr Harold Musgrove, Austin Rover's chairman, with the new Montego

fit margins on fleet sales are very slim. Dealers will need a good profitable business in retail sales and in sales to small fleets with under 25 vehicles where margins are better."

The final steps in strengthening Austin Rover's UK dealer network and the arrival of the Montego more or less coincide. But has the company left things too late?

THE UK MARKET LEADERS

Table with columns: ANNUAL CAR REGISTRATIONS, 1977, 1982, 1983. Rows include Ford, Austin Rover, Vauxhall, Datsun, VW/Audi, Renault, Volvo/DAF, Talbot, Fiat.

disaster there than to be hit by lightning in Britain.

Eastern call  
Grindlays Bank, whose symbol is an elephant, has had a branch in India since 1854—and 130 years of business dealings, has finally made its mark on the boardroom.

Beware of the dog  
Like most south coast towns, Budleigh Salterton, Devon, has a high proportion of the elderly and infirm among its population—animal, as well as human.

Trouble in the numbers game

The United States is a nation of numbers. From the weather to baseball results Americans love statistical comparisons.

The major business publications in the U.S.—Business Week, Forbes and Fortune—have all become accustomed to ranking the corporate giants of the business world in different ways—with the Fortune 500 list generally accorded most prestige in this specialised game.

Turning to Business Week's Scoreboard Special, Michaels concedes that it arrives on the newsstands a month before either the Fortune or the Forbes listings— "But only because it used lots of stale figures. You can hardly get nastier than that."

Men and Matters

That is rather like claiming that the Statue of Liberty is a statue to starboard. But the Forbes and Fortune 500 lists only industrial companies—the service sector is dealt with in a subsequent list in a later edition.

Fortune has sprung to its own defence by arguing that its lists contain more information for investors than efforts by rival magazines.

Your chances  
Have you considered the probability lately of being caught in a flood or hit by a falling aircraft? While both are fairly unusual occurrences a good deal of scientific effort is being put in to measuring such actual risks as these—and other rare but unpleasant happenings.

Men and Matters

That is rather like claiming that the Statue of Liberty is a statue to starboard. But the Forbes and Fortune 500 lists only industrial companies—the service sector is dealt with in a subsequent list in a later edition.

Fortune has sprung to its own defence by arguing that its lists contain more information for investors than efforts by rival magazines.

Your chances  
Have you considered the probability lately of being caught in a flood or hit by a falling aircraft? While both are fairly unusual occurrences a good deal of scientific effort is being put in to measuring such actual risks as these—and other rare but unpleasant happenings.

EXTEL CARDS — for the latest information on the USM. The Extel Unlisted Securities Market Service contains details of all companies traded in the Stock Exchange's Unlisted Securities Market. The information is provided in card form for easy reference and filing. The annual subscription of £390 (Overseas subject to quotation) covers the complete service to date, twice weekly updating for one year with additions and changes as they occur and all carriage and postal charges. Ask for further details — today!



HONG KONG'S FUTURE

How China got its way

By Robert Cottrell in Hong Kong

THE VEIL of secrecy covering Hong Kong's future was lifted just enough last week for Sir Geoffrey Howe, the Foreign Secretary, to tell the territory that its days of British administration are numbered. In 1997, when Britain's lease over most of Hong Kong expires, British authority will cease and the colony will become once more a part of China.

"The Chinese government," Sir Geoffrey said, "have made it clear publicly that they recognise the special circumstances of Hong Kong, and that they want a social and economic systems and lifestyle—in many ways so different from those of mainland China—to remain unchanged. We share with the Chinese Government the strongest possible common interest in these objectives."

Amid the confidence and enthusiasm marking this final leg of Sino-British negotiations, it would be easy to assume that this is exactly what Britain has been negotiating for ever since Mrs Margaret Thatcher, the Prime Minister, went to Peking and raised the Hong Kong question in September 1982.

The fact is, however, that the settlement which has been reached contains precisely those elements which produced such fear and volatility in Hong Kong only a few months ago—withdrawal of British administration, and the subjection of the territory to Chinese sovereignty with only a paper agreement to separate the territory's liberal capitalism from China's socialism.

To start with, the Hong Kong issue has been an extraordinary public relations triumph for China. Its tactics have been an unsophisticated stratagem of carrot-and-stick, but far in advance of Britain's silent shuffling.

While Britain was observing the confidentiality which it has agreed should surround the Sino-British negotiations, China was announcing regularly through quasi-official channels the state of the talks, the good fortune which would be Hong Kong's under British rule, and the perils of supporting a continued British administration.

China had the immense negotiating advantage of a simple declared objective—reunification of the motherland, described as a "sacred duty" in

the preamble to the Chinese constitution.

Britain, by contrast, has been negotiating on behalf of a territory which it regards as an arm's length, in which it has no direct economic interest, and which has itself no substantial democratic means of expressing an opinion of its own.

With the coming into force of the British Nationality Act, Britain publicly underlined the limits of its commitment to the people of Hong Kong while in the middle of negotiating their future. This, together with rows over overseas students' fees, and the negotiation of world textile quotas in which the interests of Britain and Hong Kong were opposed, did nothing to win popular sympathy for Britain in the territory.

Until Mrs Thatcher's visit 15 months ago to Peking, Chinese leaders held out two objectives: resumption of sovereignty and maintenance of Hong Kong's prosperity.

It seems unlikely that China would have been willing to negotiate some indefinite form of continued British rule, but Mrs Thatcher's public defence of the legality of Britain's claim to sovereignty over Hong Kong effectively foreclosed that option. From that point onwards, China's two main objectives seemed to become: resumption of sovereignty, and the ousting of British administration.

China appears to have conceded nothing of significance at the negotiating table. In July 1983, when regular rounds of formal diplomatic talks began, Chinese leaders issued a "10-point plan" for Hong Kong to a delegation from the Hong Kong Federation of Students (HKFS) on a visit to Peking. The HKFS document is regarded as containing the basics of the settlement which Britain is likely a year or so later to initial.

At first, Britain argued that a continued British-linked administration would be the best guarantee of maintaining Hong Kong's "stability and prosperity".

Even then, Britain probably saw its role in Hong Kong being very gradually phased out. But it wanted this to be done over the long term, without a deadline only 14 years away.

China's public anger at Britain's proposals strained the confidence of Hong Kong's



A Hong Kong street scene

businessmen and investors, culminating in the collapse of the Hong Kong dollar in September 1983, which in turn helped bring down a local bank. Both the dollar and the bank were eventually rescued, but China's evident willingness to jeopardise Hong Kong's social and economic stability persuaded Britain to drop its own plans for continued British administration.

The game was effectively over. China had prevailed. Britain appears to have nursed some hopes early on that China's promises of autonomy to Hong Kong could be in some way "guaranteed," though quite how is not clear. To judge by Sir Geoffrey's comments on Friday, Britain is now looking for "assurances" rather than "guarantees"—those assurances would amount simply to the publication of China's promises in the form of a detailed agreement between the two countries.

China would prefer a shorter, more general, more abstract document. It regards the "basic law" of post-1997 Hong Kong as something to be drawn up by China in consultation with the people of the territory, not as something to

be negotiated by Britain in exchange for a cessation of sovereignty. It is therefore far from certain that Britain will get as detailed an agreement as it might like on Hong Kong's future. But if this situation seems more "acceptable" to Hong Kong than it did two years ago, it is probably for several related reasons.

China convinced Hong Kong relatively early in the negotiations that a cessation of British sovereignty and administration was inevitable. China greeted any British opposition to its plans with outbursts of public anger calculated to frighten Hong Kong and destabilise its financial markets.

Hong Kong people are so tired of uncertainty that the prospect of a settlement is welcome if only as something to plan towards. At least China will not touch Hong Kong until 1997, leaving 15 more years of the status quo. To some Britain has seemed weak and aloof while China's strength has been clear for all to see.

Britain has no real negotiating cards left to play now—no even withholding its approval

High Tech Export Controls

Why the U.S. must not go overboard

By William Carey

THE REAGAN administration is persuaded that Soviet military power has profited greatly from advances in U.S. scientific research and development as a consequence of porous export controls, industry's foreign sales practices, a prolific research and trade journal literature, and imaginative and well-targeted Soviet espionage.

In an effort to stem the alleged leakage of technology, vigorous steps are being taken despite resistance from non-university scientists and high technology leaders who argue that the planned safeguards will stifle the creativity upon which the nation's military and economic strength rest.

The government plainly means business. Scientific and engineering societies have had their conventions and symposia derailed by last-minute government demands for the suppression of unclassified papers. Meetings open to invitees from communist countries have been put under surveillance. Points of embarkation have been sealed and cargo searches and confiscation of property being taken out without benefit of export licence. Universities hosting students of researchers from countries have been requested to isolate such individuals from less, some determined exporters of end products or components have succeeded in eluding government vigilance and friendly third-country agents have in a number of cases caught illegal shipments almost at the border of the Soviet bloc.

Is it a haemorrhage or a trickle of militarily-useful American technology and know-how that is slipping through the barrier? The facts are difficult to pin down, apart from a guarded anecdote here or there. Hints from the U.S. intelligence community describe elements of Soviet military hardware whose capabilities closely match advanced American weapons systems, leading to wry jokes to the effect that Congress appropriates funds to improve both U.S. and Soviet arms. Anecdotes are scarce, however, to nail university-based research as a significant part of the problem.

Industrial firms, competing as best they can with Japanese and other skilled producers of high technology for international sales, ask how they can hope to

survive without incorporating "the better idea" into their products even at the risk of these products getting into the wrong hands via the market-place. At the same time, industry spokesmen contend that disclosure of critical design information, of strategic value to the Soviets, is already blocked effectively at the point of origin for proprietary reasons.

To these objections the U.S. Department of Defence has turned a deaf ear. The Soviet adversary is formidable and resourceful. Interdiction of the outflow of information, by every available means, is called for. So the argument goes, and if the legal powers to deprive the adversary of the fruits of an open society are insufficient, Congress will be asked for additional powers. Here a difficulty arises, because proposals to amend export legisla-

tion invite serious conflicts between protectionist and free trade factions. Thus, an otherwise routine extension of the Export Administration Act is still stalled while controversy besets Administration proposals to tighten controls.

To a degree, issues of information control and arms control turn on a common difficulty in perception: the acceptability of risk. While experts tend to agree that complete verification is an unattainable ideal in the context of complex arms control agreements, the boggy of zero risk haunts politicians. Where information is concerned, and the prize is knowledgeable, the element of risk tends to be debated in black and white terms, with a moderate wins arguing that the only discernible risk in disclosing unclassified information lurks in a few grey areas such as microelectronics and encryption.

For a country rich in scientific and technical assets and contemplating an aggregate national effort in research and development exceeding \$100 billion in the approaching fiscal year, a sensible balance between openness and security should be manageable via selectivity—pin-

pointing information where the perceived utility to Soviet military and space interests is both real and confirmed by intelligence estimates.

That is far from the case when the enumeration of "militarily controlled technologies" subject to export controls fills a 700-page book (which itself is classified). Nor is there much balance when research scientists supported by government funds face stiff obligations to submit drafts of papers for government comment or approval prior to publication, even though their work is unclassified. It is even becoming doubtful that scholars, business executives, or ordinary tourists will be permitted to travel abroad with state-of-the-art personal computers lest they fall into the wrong hands. Finally, proposed regulations incorporate an explicit presumption that any form of public disclosure "is tantamount to export," a declaration well-calculated to conjure fantasies of heavy fines or jail terms.

Overprotection, should it continue to pass in its more extreme version, carries a price. Leading American centres of advanced scientific research may, by vote of their faculties, refuse to accept government funds which are accompanied by rules of prior restraint. Major industrial firms which carry out leading-edge unclassified research and development on products or processes of a "dual-use" kind (interchangeable as between industrial and military applications) may encounter frustrating procedural delays before their products can enter the stream of trade.

In attempting to deny information assets to the Soviet bloc, the regulators may likewise deny them to the markets of friendly countries, or at the very least bestow sales advantages to competitors of U.S. industry. Whether the burdens imposed in the interests of the national security will, over time, put a self-imposed brake on the productivity of U.S. fundamental and applied science, notwithstanding rapidly-rising public and corporate investment, is a deeper and more troubling question which, thus far, has been raised but not conclusively answered.

William Carey is Executive Officer of the American Association for the Advancement of Science.

Marx, Lenin and Scargill

From Mr D. L. Stewart  
Sir,—In saying (your Leader of April 13) that Mr Scargill is an "old-fashioned left-wing militant" you are following an almost invariable practice of the British Press when discussing socialist politicians. This is to use general and imprecise descriptions instead of the specific terms which identify different forms of socialism.

The best deduction that I can make from Mr Scargill's words and deeds is that he is a Marxist-Leninist. Those who leave Communist parties are normally excommunicated as traitors, but he seems to have left the British Communist Party on the most amicable terms, becoming its preferred candidate for high office in the NUM.

In international relations he has taken the NUM out of its contacts with existing unions from the Western democracies and into an organisation dominated by unions from countries with Marxist-Leninist systems.

He describes the Soviet Union as a country which has "established socialism," a statement made only by Marxist-Leninists or their very close sympathisers, by those who wish to denigrate all forms of socialism by equating it with the Soviet system, and by political innocents.

An "old-fashioned left-wing militant" might, like a Marxist-Leninist, try to use the organised power of the working class to establish his own version of socialism. But there would still be a fundamental difference between them. The Marxist-Leninist view of trade unions is that in "capitalist" countries they should be entirely independent and a major weapon in the overthrow of the system.

But once "socialism is established" the union undergoes a sea-change. It retains a certain role in informing the ruling party of working class opinions and aspirations, but its principal function is as a transmission belt for the party's decisions.

It should be no surprise that Mr Scargill considers Solidarity in Poland to be "anti-socialist"—if you equate socialism with Marxist-Leninism it certainly is—nor that he is totally opposed to industrial democracy in the form of workers' participation.

What does surprise me is that I have seen him interviewed many scores if not hundreds of times on TV and heard some hundreds, if not thousands, of

Letters to the Editor

questions put to him, yet I have never heard anyone ask him what kind of a socialist he is.  
D. L. Stewart  
Solihull, Warwickshire  
Appin, Argyll

Growth of OTC trading

From Dr Stephen Castell  
Sir,—With reference to Richard Lambert's timely and illuminating article on NASDAQ and the rapid (information technology-based) growth of OTC trading in the U.S. (April 16), I would take issue on one point he made: "Yet London has a valid reason for hesitating to plunge along the NASDAQ trail... Some 300,000 people are licensed with the NASD to sell securities. The market's efficiency depends on this enormous spread of investor interest—which could not be matched in the UK."

The 300,000 can apparently deal in 4,125 NASDAQ stocks—an average of 72.73 dealers per stock (crudely). Currently, 13 licensed dealers in the UK make active markets between 1,700 UK OTC stocks—an average of 0.09 dealers per stock (again crudely). The U.S. dealer average, addresses, by all accounts, 42m private direct shareholders in stocks—thus, 1.73 dealers per stock, per investor, whereas the UK's average addresses, at the moment, only 1.6m individual shareholders, thus 0.06 dealers per stock, per im investor.

The U.S. spread of investor interest is thus some 31 times that possible with regard to OTC stocks in the UK at present. So far so good.

But with the structural changes now taking place in our financial services and other sectors, we might easily see the branches and offices of banks, building societies, solicitors, as well as "job-brokers," all seeking to qualify, *inter alia*, as "one-stop (electronic?) stock shops"—a new stock retailing/dealing/distribution power of potentially some 13,000 outlets, in my conservative estimation.

Whatever the reality of such potential turns out to be, it seems clear that it must have a dramatic effect on the UK dealer per stock, per investor ratio, and I should not be surprised to see it reach, within say four years, something approaching the U.S. figure of 1.73 (which might itself of course have moved on one way or the other by then).

In other words, one entirely believable UK scenario, *circa* 1988, might be: 8,500 licensed dealers per 500 OTC stocks, per 7.5m individual investors.

Thus we can indeed match the U.S. performance. The recent acceleration of UK OTC trading, and the (coincidental?) rapid restructuring of the City make it not just possible but highly probable. London need not, and will not hesitate to plunge along a suitably-Anglicised NASDAQ trail....

Any government committed to creation of a new *inter alia*, wider share ownership (7.5, not 1.6m individuals) in companies backed to support risk-taking and the spirit of enterprise (500 of them) should not hesitate to assist this planning and the speedy creation of a future NASDAQ (British Association of Securities Dealers Automated Quotations System) to serve those 6,500 motley, competitive new NASD-licensed dealers. OTC traders all.  
Stephen Castell  
Castell Computer and Systems Telecommunications, 20 Grange Road, Wickham Bishops, Witham, Essex.

From Mr R. Richards

Sir,—I was very interested in the article by Richard Lambert. Having lived in the U.S. and dealt in stocks and shares, I agree that the U.S. way would be much better for us. Let us be honest. Most people who deal in stocks look for growth and an increase in the price of the stock they hold. Some could want to live off the dividends, but they are in the minority. We want to sell at a much higher price than we paid. Any investor worth his salt wants to see the prices, highs and lows, clearly marked every day.  
R. Richards  
17, Shelley Road, Warringham, Sussex.

Incentive effect of tax cuts

From Mr Henry Law  
Sir,—Massive cuts in public spending as suggested by Professor Minford (April 19), are not necessary to achieve the incentive effects of tax cuts. The problems caused by taxes are largely due to the government's choice of subjects for taxation.

When windows were taxed, the owners bricked them up, and in 1797 a tax on clocks and watches almost ruined a thriving industry before it was repealed in the following year. Similarly, our present day taxes on labour lead to less work, while taxes on consumption reduce demand for goods and services.

Anyone seeking to reduce the inhibiting effect of taxation would do well to recall Adam

Smith's observations, that the only way of raising public revenue without depressing production is by a tax on ground rents; moreover, a tax on ground rent cannot be passed on.

In practice, the government could achieve this by converting the local rating system to one based on site values, with the rate support grant being phased out and replaced by a nation equalisation scheme. This would enable national taxes to be reduced by about £20bn, which would be more than enough to implement Professor Minford's proposed tax-cutting scheme in welfare and social services.

Henry Law  
8, Woodhouse Road, Hove, Sussex.

Interest rate conundrum

From Mr R. P. Heineemann  
Sir,—David Hale's interesting article "The interest rate conundrum" (April 12) should be interpreted as a serious warning of the unsoundness of the present U.S. and world economic upturn.

With a general prospect of a rise in taxes in the U.S. after the Presidential election or inauguration, it is quite feasible that such tax increases occur just at the time of escalating wage and commodity price inflation and a slowdown in growth.

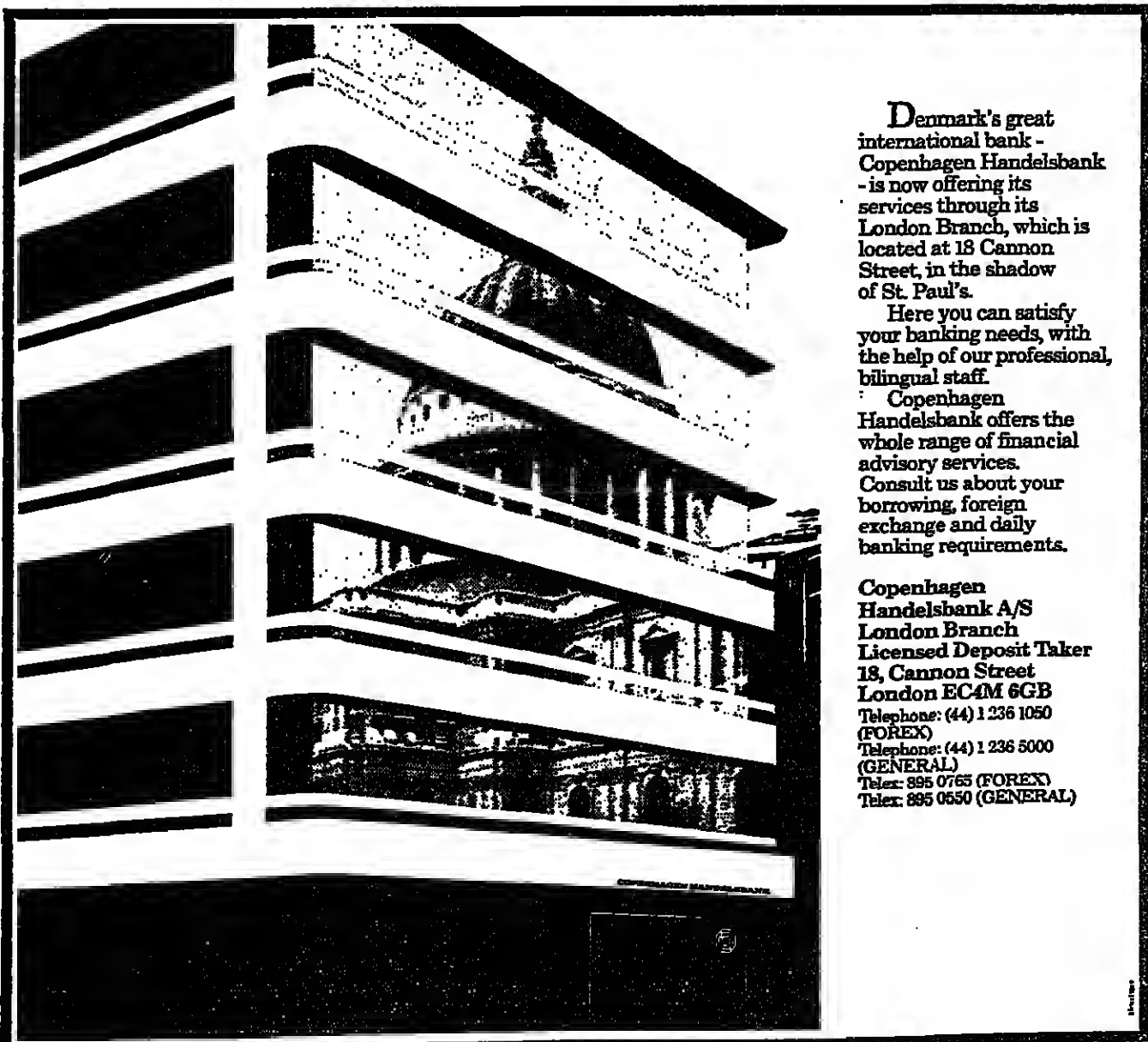
This will tend to raise interest rates, but the Government attempts to keep money supply growth under control. This in turn will hamper the return to viability of debtor countries because so much of their debt is at variable rates. It is conceivable that in a few years, despite some improvement in the U.S. dollar, could collapse on foreign exchanges as investors and holders of dollar denominated assets seek safer real returns in other currencies. It is therefore quite possible that the present modest economic growth in the developed world could come to an abrupt end as a resurgence of debtor countries' troubles becomes apparent.

A series of defaults or near-defaults, on debt owed mostly to U.S. banks, will force the Federal Reserve Board to bail out the major U.S. banks, adding to the money supply and feeding inflation further, pushing the dollar down yet further. Recent monetary theory suggests that under certain circumstances such as a strong prospect of rapidly rising inflation and interest rates, an inflationary upturn can occur before actual money supply increases due to an upward shift in the speed of circulation of money.

R. P. Heineemann  
Little Manor, Binfield Heath, Oxon.

Copenhagen Handelsbank the New Bank in the City of London

A Danish Bank in the heart of the City



Denmark's great international bank - Copenhagen Handelsbank - is now offering its services through its London Branch, which is located at 18 Cannon Street, in the shadow of St. Paul's.

Here you can satisfy your banking needs, with the help of our professional, bilingual staff. Copenhagen Handelsbank offers the whole range of financial advisory services. Consult us about your borrowing, foreign exchange and daily banking requirements.

Copenhagen Handelsbank A/S London Branch Licensed Deposit Taker 18, Cannon Street London EC4M 6GB Telephone: (44) 1236 1050 (FOREX) Telephone: (44) 1236 5000 (GENERAL) Telex: 895 0765 (FOREX) Telex: 895 0550 (GENERAL)

COPENHAGEN HANDELSBANK A/S Head Office: 2, Holmens Kanal, DK-1091 Copenhagen K., Denmark, Telephone: 45 1128500, Telex: 12185







هكذا صدق القول

**FEB**  
MANUFACTURERS & SUPPLIERS  
OF BUILDING & CHEMICAL PRODUCTS  
FOR THE CONSTRUCTION INDUSTRY.

FEB INTERNATIONAL PLC  
Albany House, Swinton Hill Road, Swinton,  
Manchester M27 1DT, Tel: 061 794 7411

SECTION II - INTERNATIONAL COMPANIES

# FINANCIAL TIMES

Wednesday April 25 1984

**Thwaites**  
Alldrive 5 ton GIANT.



Thwaites Ltd.  
Leamington Spa,  
England.  
Tel: 0926-22471

U.S. OIL GROUPS SHOW GENERAL UPWARD TREND

## Exxon up 39% in first quarter

BY WILLIAM HALL IN NEW YORK

EXXON, the world's largest oil company, increased its net income by 39.2 per cent to \$1.48bn in the first quarter of this year, underlining the strong recovery the major oil companies are now experiencing from the depressed first quarter of last year.

Mr Charles Garvin, Exxon's chairman, said the strong earnings growth reflected improved economic conditions and solid operating performance as well as continued emphasis on cost control. Colder weather in this year's first quarter increased seasonal demand and world crude prices remained relatively stable.

Group revenues rose 5.1 per cent to \$24.9bn. Earnings per share totalled \$1.75 in the latest period against \$1.22 a year ago.

Exxon's earnings increase was due in large part to a 24.5 per cent rise in foreign exploration and production profits to \$730m. U.S. earnings from the group's same segment rose by 7.6 per cent to \$551m. In common with other oil companies, Exxon's chemical businesses reported a sharp profit recovery.

The group says that increased production of crude oil and natural

gas was a "major factor" in its earnings increase. The group's net production of crude oil and natural gas liquids rose 8.6 per cent to an average of 1.647bn barrels a day.

Standard Oil Company (Indiana) and Atlantic Richfield, two of the top 10 U.S. oil companies, have reported sharp increases in first-quarter earnings due to recovery in their refining operations and higher oil production.

The Chicago-based Standard Oil Company (Indiana) increased its first-quarter net income by 49 per cent to \$594m and Atlantic Richfield (Arco) increased its net income by 20 per cent to \$395.1m.

Mr Richard M. Morrow, Standard's chief executive, said the improvement was "largely attributable to significantly higher profitability levels for refining, marketing, and transport activities and chemical operations."

The group's worldwide refining and marketing operations posted earnings of \$22m in the latest quarter, compared with a loss of \$10m a year ago. Worldwide refinery capacity use rose from 74 per cent to 80 per cent.

Arco said its increase in earnings was due "principally to increased foreign crude oil production, higher domestic natural gas sales, stronger margins for petroleum products and improved chemical markets."

Arco's refining operation increased its earnings 150 per cent to \$66m while the chemical operations moved from a loss of \$3m to earnings of \$41m.

Arco's worldwide crude oil and natural gas liquids production rose 3 per cent to an average 710,000 barrels a day in the first quarter. Standard Oil Company (Indiana), however, boosted its worldwide production by 9 per cent to an average 841,000 b/d in the first quarter.

Standard's first quarter earnings do not include any provision for possible damages stemming from the sinking in 1978 of the Amoco Cadiz, one of the group's supertankers. A U.S. judge last week found Standard liable for damages, but the company said an appeal may be made against the ruling and a separate trial would have to be held to determine the amount to be paid.

Standard Oil earned \$2.03 per share in the latest quarter against

\$1.38 share a year ago. Arco earned \$1.33 per share compared with \$1.29 per share a year ago.

As Atlantic Oil, the largest independent U.S. refiner, second-quarter net profits were \$5m, compared with a loss of \$14.5m, on revenues up from \$1.8bn to \$2bn. After payment of preferred dividends there was a per share loss of 11 cents in the latest quarter, against 89 cents.

The latest quarter's profits are down sharply from the \$272m earned in the first quarter, and take six-month profits to \$32.2m or 55 cents a share against \$14.6m, or a loss of 14 cents after preferred dividend payments. Revenues rose from \$3.9m to \$4.1bn.

Hughes Tool, one of the largest oil industry service companies, slipped back into the red in the first quarter of 1984 with a net loss of \$14.6m compared with net income of \$1.4m a year ago.

The company said that although U.S. drilling activity in the first quarter showed a modest increase compared with last year, most of this increase was offset by declines in overseas drilling activity.

## Earnings up sharply at Union Carbide

By Terry Dodsworth in New York

UNION CARBIDE, the U.S. chemicals company, rebounded from the recession in the first quarter of this year with a 123 per cent increase in net profits.

The Connecticut-based group, which wrote off \$138m for a broad ranging reorganisation in the final quarter of last year, said that net income rose to \$107m, or \$1.51 a share, against \$45m, or 69 cents a share.

Sales were up by 9 per cent to \$2.38bn against \$2.19bn in the same period last year. Mr Warren Anderson, chairman, said that the results had put the company "firmly back on the earnings recovery track."

The improvement in first quarter margins and profit level reflected the leverage of higher sales volume impacting on a leaner company.

The sales increase in the quarter was led by exports, with a rise of 28 per cent, while domestic turnover increased by 13 per cent and international by 1 per cent.

The main impetus behind the earnings growth came from the rationalised petrochemicals sector, but the group's technology, metals and industrial gases divisions all showed big increases in operating profits for the quarter.

First quarter earnings were also up sharply at Rohm & Haas, the Philadelphia-based chemicals company. Net profits jumped from \$33.7m or \$1.31 a share to \$56.3m or \$2.18, with sales up from \$462m to \$548.1m.

## Quebec paves way for insurance groups to extend operations

BY BERNARD SIMON IN TORONTO

THE SEPARATIST Government in Quebec is to take another step towards liberalising the province's financial system in the face of serious misgivings among Canada's other provinces and the country's largest banks.

A Bill introduced in Quebec's legislature has proposed changes to the province's insurance law which will allow the 33 insurance companies chartered in Quebec to extend their operations into other areas, including mortgage loans, pension fund management and various savings plans.

These companies' assets total around C\$3.3bn (U.S.\$2.5bn). They will also be allowed to form subsidiaries to operate in areas outside insurance and will be given wider freedom in their investment policies.

Mr Jacques Parizeau, Quebec's Finance Minister, said the Bill is part of a process to enable Quebec residents "to do business with real financial supermarkets and to manage their savings in a rational and integrated way."

The insurance Bill follows a spate of moves which have taken Quebec far ahead of other provinces in fragmenting the traditional "four pillars" of the Canadian financial system: banks, trust and loan companies, insurance companies and investment dealers.

A Montreal-based company, Power Corporation, announced earlier this month that it is to group various financial service interests, mainly in the trust and insurance businesses, under one holding company.

Quebec tax incentives have also encouraged a spate of new listings on the Montreal stock exchange in recent months. The perks include tax-free grants to certain companies selling shares to the public.

The moves to liberalise the province's financial system have been widely interpreted as an effort by the Government to persuade more financial institutions and other companies to base themselves in Quebec, as well as a tactic to bolster Quebec's own non-banking institutions.

Some Toronto-based bankers are concerned that Quebec's moves will prompt other provinces to act against Quebec institutions, sparking off a protracted squabble in the financial sector. Mr Robert Markinich, president of the Canadian Bankers' Association, said he is concerned that the province is "breaking down" a free internal market.

## Hawley's defence tactics challenged

By Our New York Staff

THE LIMITED, the fast growing Columbus-based retail store group which is trying to take over its much bigger rival, Carter Hawley Hale, will today seek to have the latter's defence strategy declared "unlawful and invalid" in a Los Angeles court hearing.

The court action, which will be heard in the federal district court for the central district of California, takes place against a background of growing official concern about some of the moves Carter Hawley Hale has taken to ensure its independence.

The New York Stock Exchange and the Securities and Exchange Commission (SEC) have said they are concerned that Carter Hawley's offer for its own shares might be constituted as a tender offer.

The SEC has also questioned whether Carter Hawley disclosed promptly the alleged reservations about the group's defence tactics, which involve heavy buying in its own shares, the sale of \$300m of preferred stock to General Cinema, giving it a 23 per cent voting stake, and the proposed sale of its Waldenbooks chain book store operation.

Carter Hawley Hale has already bought 37 per cent of its own shares, and Wall Street takeover tacticians believe that the only way that The Limited might succeed with its \$1.1bn takeover bid is by obtaining a court ruling forcing Carter Hawley Hale to dismantle some of its defences.

In a letter to shareholders, Carter Hawley's chairman, Philip Hawley, condemns The Limited's "lack of sensitivity shown in its unwelcome pursuit" of his company.

## Barclays to exploit US loophole

By William Hall in New York

THE BARCLAYS Bank Group has applied for permission to open "consumer banks" in 16 U.S. states in a move which could significantly strengthen its position before the barriers to banking across state lines are removed.

Barclays is the first major foreign bank to attempt to exploit a loophole in U.S. banking regulations which was highlighted a few weeks ago by a small New York Bank, U.S. Trust, when it applied for permission to open a consumer lending and deposit-taking operation in Florida and was given approval. As its operations will not make commercial loans or take demand deposits it is not categorised as a bank and hence does not conflict with U.S. banking laws, which generally prohibit banks from doing business in more than one state.

Barclays Bank and Barclays Bank International have applied for permission to open national banks which make consumer loans and accept deposits in the following states: Connecticut, Florida, Georgia, Indiana, Louisiana, Maryland, North Carolina, New Mexico, Ohio, Oregon, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, and Washington.

## Crocker chief quits after staff shake-up

BY DAVID LASCELLES IN LONDON

THE PRESIDENT of Crocker National Bank, Midland Bank's long-planned California subsidiary, has resigned - apparently because the big staff shake-up there resulted in his effective demotion.

Mr J. Hallam Dawson's departure was, according to a formal announcement from Crocker, "a result of the organisational changes at the bank which commenced earlier this year with the appointment of Mr John G. Harris as senior vice-chairman and Mr Frank Cabotet as chairman and chief executive officer."

Mr Dawson, 47, became president in 1981 just as Midland was negotiating its 57 per cent stake in Crocker. He was then number three in the bank, under John Mr Place, the chairman, and Mr William Morris, the vice-chairman.

Since then, however, Midland has appointed both Mr Cabotet and Mr

## Merrill Lynch declines

By Terry Byland in New York

THE SLOWDOWN in U.S. securities markets has again cut heavily into profits at Merrill Lynch, the largest group in the industry, for the first quarter of the year. Merrill earned only \$18.6m, and that included \$1.6m in income tax benefits. In the comparable period when Wall Street was enjoying boom trading conditions, Merrill earned \$127m or \$1.54 a share, the second highest total for any trading quarter in the group's history.

Mr Robert Birk, chairman, and Mr William Schreyer, president, noted that in previous comments they had said that "the slowing markets and deteriorating margins that marked the second half of 1983 have continued so far this year."

Revenues other than interest fell nearly 18 per cent from the comparable totals, but were only 5 per cent below those for the final quarter of last year. Expenses other than interest have been cut by 4 per cent from last year's final quarter.

Commission revenues of \$357m were 13 per cent down on last year's first quarter, but Merrill increased its market share over the period. Real estate, insurance and interest revenues moved higher but revenues from investment banking and from transactions as a principal fell sharply.

## Dart & Kraft lifts profit by 9.4%

By Our New York Staff

DART & KRAFT, the processed foods and kitchenware marketing group, recorded a 9.4 per cent increase in net profits in the first quarter to \$107.8m, or \$1.97 a share, from \$98.5m or \$1.79 a share. Sales grew by 4 per cent to \$2.41bn from \$2.32bn.

The results reflect a continuing decline in profits on Tupperware kitchen products, which have been hit by increased promotional expenditure.

They were helped by a decline in foreign currency translation losses to 5 cents a share, against 14 cents in 1983.

The group said that the Kraft cheese business, Hulsart kitchen equipment and Duracell batteries businesses continued to perform strongly in the quarter.

Operating profits at Kraft increased by 4 per cent and sales were up by 3 per cent, but these figures are set against an extremely strong quarter a year ago.

Earlier this month Dart & Kraft agreed to sell its plastic specialties businesses to a leveraged buyout investor group headed by Mr Fred W. Broiling, president of the businesses, and other senior management.

Terms of the sale, which will be a cash transaction, were not disclosed. The gain on the sale is not expected to have a material effect on Dart & Kraft's 1984 earnings.

## National Intergroup up

BY TERRY DODSWORTH IN NEW YORK

NATIONAL INTERGROUP, the U.S. steel and financial services group, reported net profits of \$7.6m or 16 cents a share in the first quarter, against a loss of \$35.4m. Sales in the quarter amounted to \$774m against \$777.7m, but the year ago figure was inflated by the presence of the Weirton Steel division, which has since been divested. Without this, sales would have amounted to \$558m in 1983.

## Digital Equipment advances

BY OUR NEW YORK STAFF

DIGITAL Equipment, the second largest U.S. computer manufacturer, reported a 28 per cent jump in third quarter net profits from \$19.6m or \$1.49 a share, to \$101.9m, or \$1.77 a share.

Sales also rose strongly in the

## Eaton results up sevenfold in quarter

By Our New York Staff

A STRONG recovery in profits at both the trucks and auto parts and the electronic and electrical parts divisions, has pushed third quarter earnings at Eaton, the Cleveland-based manufacturing group.

Net earnings for the quarter have jumped from \$8.3m or 28 cents a share to \$59.8m or \$1.85 a share. Sales gained one third to \$815.1m.

Mr E. Dewindt, chairman and chief executive, expects results for the current quarter to be "excellent."

The truck and car divisions, which make components used throughout the auto industry, and account for about half of total group sales, lifted profits from \$21m to \$63m in the first quarter.

Electronic and electrical operations, which include power transmission systems and electronics and electrical equipment, turned in profits of \$19m against \$4m in the comparable period.

For the whole of fiscal 1983, Eaton earned \$93.3m or \$3.06 a share on sales of \$26.7m. Profits peaked at \$154.1m in 1979, and fell sharply in 1982 as U.S. industry struggled with recession.

## Profits recover at Cincinnati Milacron

By Our New York Staff

THE RAPID restoration of profitability continued in the first quarter at Cincinnati Milacron, the largest machine tool manufacturer in the U.S., but sales showed a minor downturn from the final quarter of last year.

Mr Clifford Meyer, president, told the annual meeting that many of the group's machine tool plants continue to operate well below capacity. The board looks forward to increased demand and further improvement in earnings in 1984.

Net earnings of \$1.8m or 8 cents a share for the first three months of the year compared with a loss of \$4.9m in the opening quarter of 1983 when the machine tool industry was still flat, as the U.S. struggled to recover from the recession. Sales, at \$151.7m, are 22 per cent up on the 1983 quarter.

For the full fiscal 1983 year, Cincinnati turned in a deficit of \$10.3m but returned to profitability in the final quarter with net earnings of 8 cents a share on sales of \$133.5m.

## TWA cuts loss to \$87m

By Our New York Staff

THE FIRST quarterly trading report from Trans World Airlines, which was spun off from Trans World Corporation in February this year, shows a reduced loss.

The lower net loss, from \$92.7m to \$87.3m, reflects a \$61.4m narrowing of the operating loss at the domestic division, said the company.

**Hoechst**



NOTICE IS HEREBY GIVEN THAT

The Annual General Meeting will be held at 10 a.m., on Tuesday, 5th June 1984,

at the Jahrhunderthalle in Frankfurt am Main-Höchst, Pfaffenwiese.

- Agenda**
1. Presentation of the Annual Report and Accounts of Hoechst Aktiengesellschaft for 1983, with the Report of the Supervisory Board, and the Consolidated Report and Accounts for 1983.
  2. Allocation of the profit available for dividend. It is proposed to pay a dividend of DM 7.- per share of DM 50.- nominal for the financial year 1983.
  3. Ratification of the actions of the Board of Management for 1983.
  4. Ratification of the actions of the Supervisory Board for 1983.
  5. Resolution that the Board of Management be authorised until 4th June 1989, with the approval of the Supervisory Board, to increase the share capital by up to DM 200 million by the issue of new shares against contributions in cash, and to decide on the exclusion of the subscription right of shareholders in specific cases.
  6. Approval of the integration of Ruhrchemie AG, Oberhausen, into Hoechst AG, Frankfurt am Main, in accordance with § 319 of the German Stock Corporation Law.
  7. Election of auditors for the financial year 1984.

The full agenda, including the proposed resolutions, is contained in the Bundesanzeiger no. 79 of 25th April, 1984.

Shareholders wishing to be present and to vote at the Meeting must comply with Article 14 of the Articles of Association and deposit their share certificates during usual business hours by Friday, 1st June 1984, at the latest until after the Meeting, at one of the depositories listed in the Bundesanzeiger no. 79 of 25th April 1984, or, in the United Kingdom, at the offices of

S. G. Warburg & Co. Ltd.  
30, Gresham Street  
London EC2P 2EB

Frankfurt am Main, April 1984

Hoechst Aktiengesellschaft

These securities having been sold, this announcement appears as a matter of record only.

**SPAREKASSEN**  
**sds**

**Sparekassen SDS**  
(A savings bank established under Danish Banking Law)

**U.S. \$30,000,000**  
**Floating Rate Capital Notes 1991**

European Banking Company Limited	Nomura International Limited
County Bank Limited	Crédit Lyonnais
Hambros Bank Limited	The National Bank of Kuwait S.A.K.
The Nikko Securities Co., (Europe) Ltd.	Société Générale
SwedBank	Union Bank of Switzerland (Securities) Limited
Westdeutsche Landesbank Girozentrale	

March 1984

NOTICE OF REDEMPTION  
To the Holders of  
**ENTE NAZIONALE IDROCARBURI**  
E. N. I.  
(National Hydrocarbons Authority)  
**6 3/4 % Sinking Fund Debentures due June 1, 1988**

NOTICE IS HEREBY GIVEN that, pursuant to the provisions of the Sinking Fund of the Debentures of the above-described issue, Morgan Guaranty Trust Company of New York, as Fiscal Agent, has selected by lot for redemption on June 1, 1984 the principal amount thereof \$750,000 principal amount of said Debentures, as follows:

Outstanding Debentures of U.S. \$1,000 Each of Prefix "M" Bearing Serial Numbers Ending in the Following Two Digits:

20	24	28	32	36
----	----	----	----	----

Also Debentures of U.S. \$1,000 Each of Prefix "M" Bearing the Following Serial Numbers:

10	14	18	22	26	30	34	38	42	46	50	54	58	62	66	70	74	78	82	86	90	94	98
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

On June 1, 1984, there will become due and payable upon each Debenture the principal amount thereof, in such coin or currency of the United States of America as on said date is legal tender for the payment therein of public and private debts, at the option of the holder, either (a) at the corporate trust office of Morgan Guaranty Trust Company of New York, 13th Floor, 30 West Broadway, New York, N.Y. 10011, or (b) subject to any laws and regulations applicable thereto with respect to the payment, currency of payment or otherwise in the country of any of the following offices, at the principal office of Banca Nazionale del Lavoro in Rome or the principal office of Banca Commerciale Italiana in Milan or the main office of Morgan Guaranty Trust Company of New York in London, Brussels, Paris or Frankfurt or the main office of Algemeene Bank Nederland N.V. in Amsterdam or the main office of Kreditbank S.A. Luxembourg in Luxembourg-Ville.

Debentures surrendered for redemption should have attached all unmaturing coupons appurtenant thereto. Coupons due June 1, 1984 should be detached and collected in the usual manner. From and after June 1, 1984 interest shall cease to accrue on the Debentures herein designated for redemption.

**ENTE NAZIONALE IDROCARBURI**  
By: MORGAN GUARANTY TRUST COMPANY  
of New York, Fiscal Agent

April 24, 1984



INTL: COMPANIES & FINANCE

# Skanska Cement warns of 1984 earnings setback

BY DAVID BROWN IN STOCKHOLM

SKANSKA CEMENT, the big Swedish construction group, reports broadly maintained profits for 1983 and plans to step up the dividend. For the current 12 months, however, the company warns that profits could be heading a sizable setback after what it describes as two years of extremely good trading. Pre-tax profits before extraordinary items were SKr 1.53bn (\$195m) for 1983, against SKr 1.55bn a year earlier. The group expects that its results for 1984 "will be considerably lower" due to poor market conditions.

Roughly 35 to 40 per cent of the group's income is generated by its substantial financial and property holdings. Sales improved by 4 per cent to SKr 12.2bn. The proportion of foreign contracts in the group total declined from 24 to 23 per cent. An extraordinary credit of SKr 100m stemming from the sale of an investment subsidiary brought profits before allocations and taxes to SKr 1.63bn, up SKr 80m on the previous year. Skanska proposes a dividend of SKr 10 a share, up from SKr

3.67 in 1982. It also plans to split its shares from SKr 50 par value to SKr 10. Skanska and Volvo, the motor and industrial group, recently forged equity links through an elaborate share transaction. They are understood to be seeking co-operation in international industrial projects. The link has been widely interpreted in Sweden as an attempt by Volvo to fortify itself against the rising influence of the so-called Wallenberg group, which has emerged recently as a major Volvo shareholder.

# Spanish power investors face cuts in dividends

By David White in Madrid

SHAREHOLDERS of more than a dozen Spanish electrical utilities face lower dividends under a plan drawn up by the Socialist Government for reinforcing the companies' precarious finances. The plan, the main lines of which are the fruit of government-industry negotiations, comes in response to a deteriorating debt problem following heavy investment programmes which were largely financed from abroad. Private-sector companies account for almost 80 per cent of electricity sales in Spain.

The plan amounts to dedicating some FtA 15bn (\$500m) out of the sector's revenues this year to strengthening the utilities' financial base and compensating for their investments in five nuclear reactor projects which have been cancelled by the Government. This financial restructuring opens the way for other changes in the sector, through transfers of assets or mergers between private utilities.

The scheme outlined by Sr Carlos Solchaga, the Industry Minister, is linked to electricity rate increases averaging 8.75 per cent, which were approved by the Government last week. Companies are to set aside 2.5 per cent of their revenues from energy sales as a special allocation for improving their balance sheets. The Government is proposing a voluntary programme under which the companies can manage these funds directly, subject to approval of individual corporate plans.

The companies will also have to fulfil one of three conditions all aimed at reducing financial pressure. Either investments must be at least as big as net new borrowing, or new injections of equity capital must be at least as big as dividend payouts, or new dividends must be limited with an 8 per cent ceiling. This compares with a current average of about 10 per cent paid out annually to the utilities' im-plus shareholders. The Government has already limited the level of more moderate dividend payments, and welcomed last year's decision by Iberduero, the largest utility, to cut its net payout from 10 to 7.5 per cent.

Companies which do not make a pact with the Government along these lines will have to place the same proportion of their funds in a special account with the industry body UNESA, the money will be used at the Ministry's discretion. In addition, the slice of electricity revenues destined to cover the cost of cuts in Spain's nuclear power programme is being increased to 2.5 per cent, from the 2.89 per cent level set last autumn.

The Government confirmed last month it was calling off five reactor projects, allowing the total number of reactors to be increased from the six already in operation to 10 in 1992. The reduction, geared to a downscaling of forecasts for energy needs, involves writing off investments of almost FtA 900m, principally in the private sector. A further aspect of the Government's plan is to reform the tariff system which the utilities currently operate among themselves, compensating for the differences in production costs according to their sources of energy.

# Nestle lines up U.S. takeover

BY JOHN WICKS IN ZURICH

A FORMAL offer for Coopervision, the U.S. contact lens maker, is expected to be unveiled today by Nestle, the Swiss foods group. Nestle confirmed yesterday that it has been negotiating with the West Coast ophthalmological group with a view to a binding offer, said by Coopervision to be worth around \$50m. If a bid is made, it will be the largest takeover ever undertaken by a Swiss company.

Nestle, which has big cash reserves, has had its name linked with a variety of takeover candidates in recent months. Nestle is due to release its 1983 report and accounts at a Press conference today. It is expected to make clear its position on Coopervision at the same time. Earlier this month, Nestle announced a 15 per cent increase in net profits and paved the way for a rights issue, the

first equity issued by the company for almost ten years. The improving cash-flow has allowed Nestle to maintain a healthy cash position. At the end of last year, cash, securities and deposits totalled SwFr 5.24bn (\$2.4bn). Coopervision, which went public last year having been set up by Cooper Laboratories in 1980, had sales of \$198.6m for 1982-83. In the first quarter of this year turnover was up to \$57.1m.

# Volvo BM registers steady growth

Financial Times Reporter

VOLVO BM, the construction equipment division of the Swedish automotive group, has reported a 28 per cent rise in profits before allocations and tax in 1983 to SKr 106m (\$13.9m).

Turnover, including that of Kockum Landsverk, the dump truck manufacturer acquired last year, was up 28 per cent to SKr 2.5bn. Excluding Kockum, turnover was 11 per cent higher. Mr Eric Johanson, president, said that income was not satisfactory, but was gratifying considering the economic conditions that prevailed in 1983.

Regarding the recently announced talks aimed at merging Volvo BM with the construction equipment division of Clark Equipment of the U.S., Mr Johanson said the aim was to create "an entity strongly established on all major markets." Volvo BM and Clark Michigan have both shown considerable strength during the latest recession. Taken together, the two companies could reach positive economies of scale in R&D, manufacturing, marketing and other areas. He claimed they would be the leading world supplier of off-highway dump trucks and the third largest of wheel loaders.

# Daimler-Benz in Japanese sales drive

By Our Financial Staff

DAIMLER-BENZ, the West German motor group, plans to increase car sales in Japan to more than 10,000 vehicles annually in the next three years with the introduction of new models, according to Herr Hans-Juergen Hinrichs, marketing manager. In a company statement, Herr Hinrichs told a German Trade Fair in Tokyo that Daimler plans to launch its Mercedes-Benz 190 compact series on the Japanese market in the autumn. More than 6,600 new Mercedes-Benz cars were registered in Japan in 1983, making Daimler the most successful German importer in Japan of top range models.

# German lift for Philip Morris

By Our Financial Staff

PHILIP MORRIS, the U.S. diversified tobacco group, increased its share of the West German cigarette market in the first quarter of this year to 17 per cent from 14 per cent a year ago. Sales rose 26.7 per cent to 4.8bn cigarettes from 3.8bn, making the company market leader in Germany. Total German sales rose 4 per cent to 28bn cigarettes in the quarter.

**N.S. FINANCE CORPORATION N.V.**  
U.S. \$20,000,000 Guaranteed Floating Rate Notes Due 1985/6/7/8  
Unconditionally guaranteed by Nedsche Landsbank Scheepspijpsteekbank N.V.  
For the six months 24th April, 1984 to 24th October, 1984, the Notes will carry an interest rate of 11 1/4% per annum with a Coupon Amount of U.S.\$22.22 payable on 24th October, 1984.  
Bankers Trust Company, London, Principal Paying Agent

# Solvay doubles profits as chemical demand picks up

BY PAUL CHEESERIGHT IN BRUSSELS

SOLVAY, the international chemicals concern and Belgium's second largest company, last year doubled net profits and hoisted its net dividend back to levels last approached in 1979.

Net profits were BFr 5.2bn (\$96m) compared with BFr 2.59bn in 1982. The net dividend is going up to BFr 235 a share from BFr 200. Solvay's financial position began to improve in 1982 as the group sought to reduce costs by, for example energy saving and the closure of less profitable

plants. This process continued in 1983 but was helped crucially by an upturn in world demand. Group sales were BFr 198.7bn, or 12 per cent higher than the previous year's BFr 177.7bn. Of the total, Germany and France accounted for nearly half.

The generally more favourable economic conditions which are reflected in the group figures also show up in the profits of the parent company, whose activities cover Belgium, France, Italy and Spain. Net profits rose to BFr 2.9bn last year from BFr 2.2bn in 1982.

# Societe Generale improves its balance sheet ratios

BY OUR BRUSSELS STAFF

THE FINANCIAL structure of Societe Generale, Belgium's largest financial and industrial holding company, has been transformed steadily over the last three years, culminating in a BFr 5.5bn (\$101.5m) share issue last November.

In its annual report, just published, Societe Generale said that in 1982 and 1983, the ratio of own funds to fixed assets and investment holdings rose from 69 to 82 per cent. During that period the group's own investment holdings rose by 9 per cent.

Both Societe Generale's own capital raising and the capital raising of its affiliates have taken place against a back-

ground of special tax concessions for new stock exchange investment. Capital raising by Belgian listed companies over those two years reached a total of more than BFr 83m.

In the case of Societe Generale itself, shareholders equity increased over 3.5 times between 1980 and 1983, from BFr 16.4bn to BFr 42.5bn. At the end of last year shareholders' funds were BFr 34.7bn, against BFr 26.57bn at the end of 1982, while net liabilities fell to BFr 7.5bn from BFr 12.2bn.

For 1983, Societe Generale earned net profits of BFr 1.2bn and held its dividend at BFr 90 net for the third successive year.

# Beijer to buy stake in Calmar

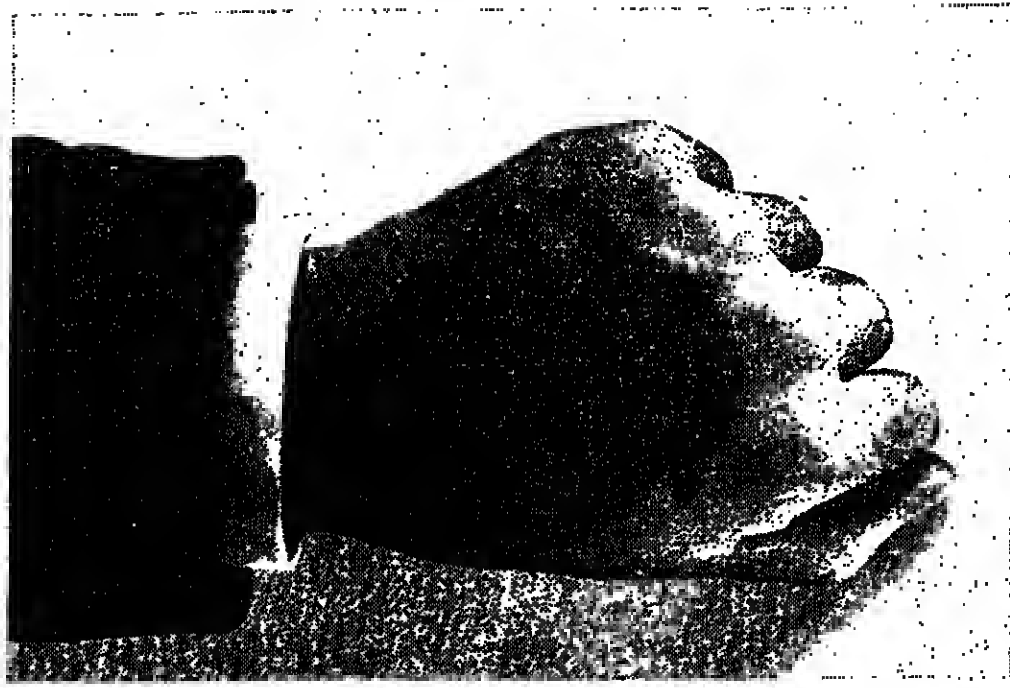
BY OUR STOCKHOLM STAFF

AGREEMENT HAS been reached for Beijer, the large Swedish investment company, to buy a 22 per cent stake in Calmar, a U.S. manufacturer of dispensing equipment, for some \$20m.

The group will finance the acquisition with the issue of "up

to \$30m" in subordinated debt instruments in London early summer.

Calmar and the Beijer subsidiary, Kebo, already co-operate in several business areas, and the deal will open the way for possible worldwide marketing of Kebo hygienic products.



## Business and finance deals in Australia? Ring the people who know Down Under like the back of their hand

It takes a big, growing bank to know a big, growing country.

If you have business to transact in Australia, get in touch today with CTB, an arm of one of Australia's largest banking groups.

We can satisfy your curiosity, provide contacts and market information, and help you in just about any way you need.

And that includes providing competitive terms in Euro-currency transactions, plus all the information and service you need in today's fast-moving money markets.

Get in touch with our Commercial Operations Group at our London branch: 01-600 0822 and tell us your needs.

COMMONWEALTH TRADING BANK OF AUSTRALIA.



01-600 0822

London: 8 Old Jewry, EC2R 8ED. Tel: (01) 600 0822. Telex: 883864.  
New York: Tel: 599 1000. Telex: 238550.  
Hong Kong: Tel: 286441. Telex: 60466, 60802 & 61629.

Tokyo: Tel: 213 7311. Telex: 28167.  
Los Angeles: Tel: 689 4702. Telex: 4720573  
Singapore: Tel: 224 3877. Telex: 20920.

**WANTED.** British made portable bus. micro, incl. Fin. Plan, Exec. Desk Top, w.p. & filing software. Must have BT aprvd. on-board modem and auto-dial for direct connect to Prestel, Micronet 800, and other Viewdata systems. Built-in screen, RS232 and printer interfaces, twin disk drives and 64K bytes of memory req'd. Should be no more than £1000\* max.



**FOR SALE:** The new Wren Executive System. No other small computer offers you more... so why settle for less?



Distributed by: Prism Business Systems Ltd Telephone: 01-253 2277  
Carry the company in your hand not on your shoulders

The Wren is designed by Business Computers Limited. Perfect Software™ is a trademark of Perfect Software Inc. Micronet 800 is the leading brand Terminal Link and Business Network Executive Desktop are the copyright of Business Systems and Software Limited. Prestel is the trademark of British Telecom. All prices exclude VAT.

For full details of the Wren Executive System complete this coupon and send it to:

Wren Executive Systems, 18-29 Mora Street, City Road, London, EC1V 8BT  
Telephone: 01-253 2277

Name \_\_\_\_\_  
Position \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_  
Telephone \_\_\_\_\_

## North American Quarterly Results

Company	1984 Q1	1983 Q1	1984 Q1	1983 Q1
	\$	\$	CS	CS
<b>ALLEGHENY INTL.</b> Consumer products, hardware, metals	Revenue: 57.0m	57.7m	Net profit: 1.5m	1.5m
<b>CONTINENTAL TELECOM</b> Independent telephone company	Revenue: 53.0m	48.0m	Net profit: 0.5m	0.5m
<b>KENNERLY-CLARK</b> Textiles, newspaper	Revenue: 362.4m	371.0m	Net profit: 4.0m	2.3m
<b>AMERICAN BRANDES</b> Tobacco products	Revenue: 1.92m	1.78m	Net profit: 1.8m	1.5m
<b>DOMINION RESOURCES</b> Energy resources	Revenue: 68.0m	62.3m	Net profit: 7.7m	6.7m
<b>MCDONALD'S</b> Fast food restaurants	Revenue: 738.4m	655.7m	Net profit: 1.7m	1.9m
<b>BO FOREST PRODUCTS</b> Pulp & paper	Revenue: 175.2m	174.5m	Net profit: 10.7m	10.7m
<b>DUN &amp; BRADSTREET</b> Business information	Revenue: 365.1m	314.3m	Op. net profit: 73.2m	62.5m
<b>CHESTERBROUGH-POMER'S</b> Tobacco, foods	Revenue: 471.1m	401.2m	Net profit: 14.0m	12.3m
<b>GREAT LAKES FOREST PROD.</b> Pulp and paper	Revenue: 127m	108m	Net profit: 2.0m	2.0m
<b>CRUISE</b> Insurance	Revenue: 13m	34.8m	Op. net profit: 1.05	2.05
<b>CONRAN</b> Retail food store	Revenue: 87.5m	73.7m	Net profit: 12.5m	12.5m
<b>CONRAN</b> Retail food store	Revenue: 87.5m	73.7m	Net profit: 12.5m	12.5m
<b>PEPPER CENTRAL</b> Energy equipment, electronics	Revenue: 521.2m	522m	Net profit: 38.5m	28.5m
<b>PEOPLE EXPRESS AIRLINES</b> Passenger airlines	Revenue: 108.1m	81.2m	Net profit: 13,000	2,100
<b>SAFARI STORES</b> Supermarkets	Revenue: 4.4m	4.2m	Net profit: 0.2m	0.2m



INTL. COMPANIES & FINANCE

Sharp rise in group earnings at Ito-Yokado

By Yoko Shibata in Tokyo

IYO-YOKADO, a major supermarket chain operator, has consolidated its position as Japan's most profitable retailer in the year to February.

Together with its 19 consolidated subsidiaries the company lifted net earnings by 43.5 per cent to ¥21.24bn (\$94.4m) on group sales of ¥998bn, up by 7.6 per cent from the previous year. Net profits per share improved to ¥76.83 from ¥55.43 and the dividend is held at ¥19 per share.

The strong group showing is attributed to a significant improvement in parent company results. Pre-tax profits advanced by 43 per cent to ¥31.85bn, net profits by 20 per cent to ¥14.82bn, and sales by 6.9 per cent to ¥860.9bn.

Good results from the company's listed subsidiaries, such as Seven Eleven, Denny's Japan, and York-Benimaru also contributed to the improved group earnings. Both Seven Eleven and Denny's Japan lifted pre-tax profits by more than 30 per cent.

For the current year Ito-Yokado's consolidated sales are likely to top ¥1,000bn for the first time and consolidated net profits are expected to reach ¥70bn.

Record issue for Malayan Banking

By Wong Sulong in Kuala Lumpur

MALAYAN BANKING, Malaysia's second largest bank, is seeking to raise 630m ringgit (US\$270m) from its shareholders by a record issue on the Kuala Lumpur Stock Exchange.

The directors say the proceeds would be used to finance the bank's 59-store headquarters being built in Kuala Lumpur and a sports and staff training centre, and to align its capital to the rapid growth of its deposits and assets as required by law. Malayan Banking shares fell 70 cents to 11 ringgit after the announcement.

The bank is proposing to issue 45m new shares through a one-for-four rights issue, priced at 6 ringgit per share. It will also issue 360m 8 per cent, irrevocable, convertible and unsecured notes, to be sold at their par value of one ringgit each on the basis of two notes for each share held. There will also be a one-for-four scrip issue.

Following the issues, the bank's paid-up capital would increase from 180m ringgit to 270m ringgit.

After-tax profits of the bank for the six months ended December rose 34 per cent to 50.6m ringgit. The biggest shareholder in the bank is the Malay investment agency, Permodalan Nasional.

ADB completes 40% of 1984 borrowing plan

BY PETER MONTAGNON IN AMSTERDAM

THE Asian Development Bank (ADB) has already completed about 40 per cent of 1984 borrowing programme, having borrowed intensively in the early part of the year out of fears that interest rates will rise. Mr Edgar Roberts, its treasurer, said yesterday.

"Our view at the end of last year was that we had bottomed out in terms of the interest rate cycle," he said in an interview. "With U.S. rates likely to go up this year, either interest rates in other markets will also go up, or exchange rates will weaken, which reduces the amount of capital available in those markets for the Asian Development Bank."

Total capital market borrowing in 1984 will again be about \$1bn compared with \$970m last year. Further slight increases are expected until 1987 when the ADB's borrowing needs will jump as maturing debts have to be refinanced, he said.

Yesterday the bank signed a \$1.20bn, 8 1/2 per cent bond issue at its annual meeting here, but Mr Roberts said the bulk of this year's borrowing is expected to be in yen. The bank has already borrowed ¥40bn this year and could raise as much as ¥90bn altogether. Its borrowing policy involves seeking out long maturities at low fixed rates of interest. Unlike the World Bank, which occasionally raises relatively short-dated bonds, ADB prefers at least a 10-year maturity.

It is unlikely to launch a further issue in sterling this year, having already floated a \$100m, 10 1/2 per cent building issue but it does expect to raise dollars to retire maturing debt.

At the end of 1983 the bank's total outstanding borrowings were \$3.4bn of which 36 per cent were in yen, 22 per cent in D-Marks, and 19 per cent in Swiss francs. The total cost of outstanding borrowings rose last year to 8.56 per cent from 8.33 per cent in 1982.

Room occupancy averaged only 48 per cent against a targeted 55 per cent, but revenues were 17 per cent up on the previous year and losses were reduced from BD 1.97m (US\$5.2m) to BD1.32m. The reduction was mainly due to a decrease in debt service payments, from \$3.2m to \$1.3m.

The Diplomat is owned by the publicly-quoted National Hotels Company, a Bahraini shareholding company in which Kuwait Foreign Trading, Contracting and Investment Company (KFTCIC) holds a controlling 58.5 per cent interest, following \$18.5m injection of capital in 1982. THF manages the hotel.

The U.S. dollar share of the market was 73 per cent of assets and 66.1 per cent of liabilities, down from 74.9 per cent and 68.3 per cent in December.

The Diplomat, Bahrain's \$40m Trusthouse Forte hotel which opened in February 1982, improved its performance last year but is having an uphill struggle to obtain an economic share of the market.

Arab countries, deposits at \$30.4bn exceeded their borrowings by \$11.8bn. The major recipients of this surplus were Latin America, Asian countries and Eastern Europe. These are included in the "other countries" category which accounted for net borrowings of \$7.7bn.

Western European countries were net borrowers by \$2.5bn and other offshore centres (mainly Hong Kong and Singapore) by \$1.4bn.

The U.S. dollar share of the market was 73 per cent of assets and 66.1 per cent of liabilities, down from 74.9 per cent and 68.3 per cent in December.

The Diplomat, Bahrain's \$40m Trusthouse Forte hotel

sits from the same sector represented 23.3 per cent of total liabilities.

Arab countries, deposits at \$30.4bn exceeded their borrowings by \$11.8bn. The major recipients of this surplus were Latin America, Asian countries and Eastern Europe. These are included in the "other countries" category which accounted for net borrowings of \$7.7bn.

Western European countries were net borrowers by \$2.5bn and other offshore centres (mainly Hong Kong and Singapore) by \$1.4bn.

The U.S. dollar share of the market was 73 per cent of assets and 66.1 per cent of liabilities, down from 74.9 per cent and 68.3 per cent in December.

The Diplomat, Bahrain's \$40m Trusthouse Forte hotel

sits from the same sector represented 23.3 per cent of total liabilities.

Arab countries, deposits at \$30.4bn exceeded their borrowings by \$11.8bn. The major recipients of this surplus were Latin America, Asian countries and Eastern Europe. These are included in the "other countries" category which accounted for net borrowings of \$7.7bn.

Western European countries were net borrowers by \$2.5bn and other offshore centres (mainly Hong Kong and Singapore) by \$1.4bn.

The U.S. dollar share of the market was 73 per cent of assets and 66.1 per cent of liabilities, down from 74.9 per cent and 68.3 per cent in December.

The Diplomat, Bahrain's \$40m Trusthouse Forte hotel

sits from the same sector represented 23.3 per cent of total liabilities.

Arab countries, deposits at \$30.4bn exceeded their borrowings by \$11.8bn. The major recipients of this surplus were Latin America, Asian countries and Eastern Europe. These are included in the "other countries" category which accounted for net borrowings of \$7.7bn.

Western European countries were net borrowers by \$2.5bn and other offshore centres (mainly Hong Kong and Singapore) by \$1.4bn.

The U.S. dollar share of the market was 73 per cent of assets and 66.1 per cent of liabilities, down from 74.9 per cent and 68.3 per cent in December.

The Diplomat, Bahrain's \$40m Trusthouse Forte hotel

sits from the same sector represented 23.3 per cent of total liabilities.

Arab countries, deposits at \$30.4bn exceeded their borrowings by \$11.8bn. The major recipients of this surplus were Latin America, Asian countries and Eastern Europe. These are included in the "other countries" category which accounted for net borrowings of \$7.7bn.

Western European countries were net borrowers by \$2.5bn and other offshore centres (mainly Hong Kong and Singapore) by \$1.4bn.

The U.S. dollar share of the market was 73 per cent of assets and 66.1 per cent of liabilities, down from 74.9 per cent and 68.3 per cent in December.

The Diplomat, Bahrain's \$40m Trusthouse Forte hotel

sits from the same sector represented 23.3 per cent of total liabilities.

Arab countries, deposits at \$30.4bn exceeded their borrowings by \$11.8bn. The major recipients of this surplus were Latin America, Asian countries and Eastern Europe. These are included in the "other countries" category which accounted for net borrowings of \$7.7bn.

Western European countries were net borrowers by \$2.5bn and other offshore centres (mainly Hong Kong and Singapore) by \$1.4bn.

The U.S. dollar share of the market was 73 per cent of assets and 66.1 per cent of liabilities, down from 74.9 per cent and 68.3 per cent in December.

The Diplomat, Bahrain's \$40m Trusthouse Forte hotel

Growth in Bahrain OBU market

BY MARY FRINGS IN BAHRAIN

BAHRAIN'S offshore banking market grew by 3.4 per cent to U.S.\$59.5bn in February, the Bahrain Monetary Agency (BMA) reports. Upwards of \$400m of the \$1.98bn increase can be attributed to the inclusion of the Arab Investment Company (AIC), which has moved its treasury and commercial banking operation from Riyadh to its Bahrain offshore banking unit (OBU).

The situation of the market from \$92.7bn at the end of December to \$57.97bn in January and almost back to \$60bn a month later, are thought to reflect the operations of a few major institutions among the 76 OBU's reporting to the BMA.

An analysis of the February figures shows that loans to non-banks accounted for 30.6 per cent of total assets while deposits from the same sector represented 23.3 per cent of total liabilities.

Arab countries, deposits at \$30.4bn exceeded their borrowings by \$11.8bn. The major recipients of this surplus were Latin America, Asian countries and Eastern Europe. These are included in the "other countries" category which accounted for net borrowings of \$7.7bn.

Western European countries were net borrowers by \$2.5bn and other offshore centres (mainly Hong Kong and Singapore) by \$1.4bn.

The U.S. dollar share of the market was 73 per cent of assets and 66.1 per cent of liabilities, down from 74.9 per cent and 68.3 per cent in December.

The Diplomat, Bahrain's \$40m Trusthouse Forte hotel

sits from the same sector represented 23.3 per cent of total liabilities.

Arab countries, deposits at \$30.4bn exceeded their borrowings by \$11.8bn. The major recipients of this surplus were Latin America, Asian countries and Eastern Europe. These are included in the "other countries" category which accounted for net borrowings of \$7.7bn.

Western European countries were net borrowers by \$2.5bn and other offshore centres (mainly Hong Kong and Singapore) by \$1.4bn.

The U.S. dollar share of the market was 73 per cent of assets and 66.1 per cent of liabilities, down from 74.9 per cent and 68.3 per cent in December.

The Diplomat, Bahrain's \$40m Trusthouse Forte hotel

sits from the same sector represented 23.3 per cent of total liabilities.

Arab countries, deposits at \$30.4bn exceeded their borrowings by \$11.8bn. The major recipients of this surplus were Latin America, Asian countries and Eastern Europe. These are included in the "other countries" category which accounted for net borrowings of \$7.7bn.

Western European countries were net borrowers by \$2.5bn and other offshore centres (mainly Hong Kong and Singapore) by \$1.4bn.

The U.S. dollar share of the market was 73 per cent of assets and 66.1 per cent of liabilities, down from 74.9 per cent and 68.3 per cent in December.

The Diplomat, Bahrain's \$40m Trusthouse Forte hotel

sits from the same sector represented 23.3 per cent of total liabilities.

Arab countries, deposits at \$30.4bn exceeded their borrowings by \$11.8bn. The major recipients of this surplus were Latin America, Asian countries and Eastern Europe. These are included in the "other countries" category which accounted for net borrowings of \$7.7bn.

Western European countries were net borrowers by \$2.5bn and other offshore centres (mainly Hong Kong and Singapore) by \$1.4bn.

The U.S. dollar share of the market was 73 per cent of assets and 66.1 per cent of liabilities, down from 74.9 per cent and 68.3 per cent in December.

The Diplomat, Bahrain's \$40m Trusthouse Forte hotel

sits from the same sector represented 23.3 per cent of total liabilities.

Arab countries, deposits at \$30.4bn exceeded their borrowings by \$11.8bn. The major recipients of this surplus were Latin America, Asian countries and Eastern Europe. These are included in the "other countries" category which accounted for net borrowings of \$7.7bn.

Western European countries were net borrowers by \$2.5bn and other offshore centres (mainly Hong Kong and Singapore) by \$1.4bn.

The U.S. dollar share of the market was 73 per cent of assets and 66.1 per cent of liabilities, down from 74.9 per cent and 68.3 per cent in December.

The Diplomat, Bahrain's \$40m Trusthouse Forte hotel

sits from the same sector represented 23.3 per cent of total liabilities.

Arab countries, deposits at \$30.4bn exceeded their borrowings by \$11.8bn. The major recipients of this surplus were Latin America, Asian countries and Eastern Europe. These are included in the "other countries" category which accounted for net borrowings of \$7.7bn.

Western European countries were net borrowers by \$2.5bn and other offshore centres (mainly Hong Kong and Singapore) by \$1.4bn.

The U.S. dollar share of the market was 73 per cent of assets and 66.1 per cent of liabilities, down from 74.9 per cent and 68.3 per cent in December.

The Diplomat, Bahrain's \$40m Trusthouse Forte hotel

sits from the same sector represented 23.3 per cent of total liabilities.

Arab countries, deposits at \$30.4bn exceeded their borrowings by \$11.8bn. The major recipients of this surplus were Latin America, Asian countries and Eastern Europe. These are included in the "other countries" category which accounted for net borrowings of \$7.7bn.

Western European countries were net borrowers by \$2.5bn and other offshore centres (mainly Hong Kong and Singapore) by \$1.4bn.

The U.S. dollar share of the market was 73 per cent of assets and 66.1 per cent of liabilities, down from 74.9 per cent and 68.3 per cent in December.

The Diplomat, Bahrain's \$40m Trusthouse Forte hotel

sits from the same sector represented 23.3 per cent of total liabilities.

Nippon Steel orders new vessel and guarantees another four

BY MARY FRINGS IN TOKYO

TOKYO - Nippon Steel Corporation said yesterday that its new 50 per cent subsidiary, Nippon Steel Shipping, has ordered a 170,000 gross tonnes bulk carrier to be launched in March 1985.

Nippon Steel has also given five-to-ten-year cargo guarantees to enable another four vessels of about the same tonnage to be ordered by five other shipping companies for launching by early 1985. A cargo guarantee is required by Japan's Transport Ministry before permission to build new vessels is granted.

Nippon Steel Shipping's other owners include Nippon Steamship with 30 per cent, Shinwa Shipping with 10 per cent and Nittetsu Trading with 10 per cent.

The Japanese steel industry's coking coal and iron ore imports from Australia, Brazil and India offer result in carriers being built with cargo guarantees from leading steel producers, which in turn profit from large steel-plate orders from shipbuilders. But industry sources

noted that the new Nippon Steel orders have come when the world shipping market faces a tonnage surplus.

In Japan, laid-up tonnage is now about 41.5m tonnes, with new orders for the 1983-84 financial year ended March 31 at 12.43m tonnes, according to the Japan Shipbuilding Industry Foundation.

Nippon Steel said the new orders would help to stimulate demand for its depressed large steel-plate division and at the same time assist Japanese yards suffering from recession.

Despite international criticism of recent Japanese shipbuilding programmes, the four new buildings supported by Nippon Steel cargo guarantees have attracted semi-official loans. Industry sources said half the costs of building each vessel will be financed by long-term low-interest loans from the semi-official Japan Development Bank, justified on the ground that each

will carry cargoes of national necessity.

The bulk carrier ordered by Nippon Steel Shipping had not received semi-official loans and will be financed by the company equity holders.

Hitachi and Showa Denko K.K. have agreed to team up with Allied Corporation, a major U.S. chemical company, to develop a new type of battery.

A Showa Denko spokesman said the agreement with Allied aims to develop a "polymer battery" by infusing ions into conductive polymer via electrochemical charging reaction.

Compared with the conventional battery that uses lead and nickel cadmium, a polymer battery could be lighter, more powerful and made in many shapes, the spokesman said. The companies hope to market the battery in several years' time.

Reuter

Life Savers and Allen's Confectionery to merge

BY LACHLAN DRUMMOND IN SYDNEY

TWO AUSTRALIAN sweets manufacturing groups, Life Savers (Australasia) and Allen's Confectionery are to merge, a move which will create a confectionery combine to match the UK controlled Cadbury-Schweppes group in market share.

The decision to merge the two companies through the issue of shares in a new master company to existing shareholders comes a year after an abortive takeover attempt by Life Savers for Allen's in competition with Cadbury.

The new group will have total assets of A\$135m (U.S.\$125m) and a market capitalisation of a little less, based on the combined capitalisations. Life Savers, with its bias towards chocolate-based confectionery, and Allen's with its

deeper involvement in sugar-based sweets, should provide a well balanced competitor for Cadbury, which has a roughly 25 per cent share of the confectionery market.

Cadbury recently sold its almost 15 per cent stake in Allen's to the Singapore group Jack Chia, which established itself as a shareholder during last year's bidding duel, as did the Rothmans group.

Life Savers shareholders will receive seven shares in the new holding company for every two already held, while Allen's holders will receive six for every two, a formula which will leave Nestle of Switzerland, Life Savers' largest corporate shareholder, with around 6 per cent of the merged group, a similar level to that of Chia and Rothmans.

This announcement appears as a matter of record only. March 1984

# TEC

## TOKYO ELECTRIC CO., LTD.

(Tokyo Denki Kabushiki Kaisha)

**U.S.\$70,000,000**

**6 1/2 per cent. Guaranteed Bonds 1989**

unconditionally and irrevocably guaranteed as to payment of principal and interest by

**The Kyowa Bank, Ltd.**  
(Kabushiki Kaisha Kyowa Ginko)

with

**Warrants**

to subscribe for shares of common stock of Tokyo Electric Co., Ltd.

**ISSUE PRICE 100 PER CENT.**

**Daiwa Europe Limited**

**Credit Suisse First Boston Limited**  
**Commerzbank Aktiengesellschaft**  
**Algemene Bank Nederland N.V.**  
**Banque Bruxelles Lambert S.A.**  
**Banque Nationale de Paris**  
**Crédit Lyonnais**  
**Robert Fleming & Co. Limited**  
**Kleinwort, Benson Limited**  
**Kyowa Bank Nederland N.V.**  
**Samuel Montagu & Co. Limited**  
**The National Commercial Bank (Saudi Arabia)**  
**Pierson, Heldring & Pierson N.V.**

**Nomura International Limited**  
**Mitsui Finance Europe Limited**  
**Al-Mal Group**  
**Banque Indosuez**  
**Country Bank Limited**  
**DG BANK Deutsche Genossenschaftsbank**  
**Goldman Sachs International Corp.**  
**Contracting & Investment Co. (S.A.K.)**  
**Mitsui Trust Bank (Europe) S.A.**  
**Morgan Grenfell & Co. Limited**  
**The Nikko Securities Co., (Europe) Ltd.**  
**Société Générale de Banque S.A.**


**Swiss Bank Corporation International Limited**

**Banca del Gottardo**  
**Banca Unione di Credito**  
**Bank Leu International Ltd**  
**Compagnie de Banque et d'Investissements CBI**  
**Gulf International Bank B.S.C.**  
**Nederlandsche Middenstandsbank nv**

**U.S. \$100,000,000**  
**National Westminster**  
**Finance B.V.**  
(Incorporated in The Netherlands with limited liability)

**Guaranteed Floating Rate Capital**  
**Notes 1992**

Convertible until 1986 into 10 per cent. Guaranteed Capital Bonds 1992



In accordance with the provisions of the Notes, notice is hereby given that for the six months interest period from 25 April to 25 October, 1984 the Notes will carry an Interest Rate of 11 1/4% per annum. The interest payable on the relevant interest payment date, 25 October, 1984 against Coupon No. 8 will be U.S. \$293.65.

The Conversion Interest Amount applicable to Notes which have been presented for conversion will be U.S. \$6.94 per U.S. \$5,000 Note and this will be payable on 30 April, 1984.

By The Chase Manhattan Bank, N.A., London  
Agent Bank

# McKechnie Brothers

As anticipated, profits in each of our three main geographical areas of operation have improved compared with the corresponding period last year giving an increase in profit before tax of nearly a quarter.

In the UK rationalisation of our brass rod business is proceeding as planned following the acquisition of IMI Rod & Wire and the results from our plastic and consumer interests - which continue to grow in relative importance - have encouraged us to support further heavy capital expenditure. Overseas we have seen greater stability in our South African operations and we have benefited from some improvement in demand in both Australia and New Zealand.

At the present time we expect to maintain similar progress in our second half-year.

**Dr. J. M. Butler, Chairman**

Interim Results - unaudited	Half-year ended 31st January		Year ended 31st July
	1984	1983	1983
Turnover	£7,179	78,129	158,108
Operating Profit	6,016	5,005	10,377
Share of Profits of Associates	2,101	1,956	3,419
Net Profit	4,251	3,763	6,955
Extraordinary items	96	(27)	(334)
Ordinary Dividend	1,203	987	4,183
Earnings per Ordinary Share	7.1p	7.5p	13.6p

Note - Interim dividend of 2.00p (1983 2.00p) per Ordinary Share making a gross equivalent of 2.85714p (1983 2.85714p).

**McKechnie Brothers plc** ALDRIDGE, WALSALL WS9 8DS

No one asks you this far and yet in business, you must

# Bank Brussels Lambert

Banking and financial services for high achievers

Making a profit is the ultimate objective of any dynamic businessman. But it is not the only one! Personal achievement is also a driving force: improving efficiency, negotiating a contract, overtaking competitors, developing new markets, earning the confidence of customers.

Since you seek personal achievement in business, Bank Brussels Lambert can help you by smoothing the way and removing many of the obstacles.

Our international network radiates out of Brussels, headquarters of the European Common Market, and covers the world's key business and financial centers. Consequently, we have both the size and locations to handle the full range of your commercial needs. Yet we are still small enough to be quick, flexible, responsive and personal. Because we know that banking is as much a matter of people as it is of money, let us put our experience and expertise at your disposal.

**BBL Banking in New York**

Our office in New York has been upgraded to the status of a full branch to provide you with first-class banking services.

For further information, please contact:  
Pierre Heilporn - General Manager  
Bank Brussels Lambert  
630 Fifth Avenue - Rockefeller Centre  
Suite 2020 - New York, NY 10111 - 0020  
Tel: (212) 489-7000  
Telex: 6891150

**BBL Bank Brussels Lambert**

BBL is also present in Spain, Great Britain, Italy, Singapore, Switzerland, France, Australia, Japan, etc...

IMPACT-FCB Belgium BBL/99

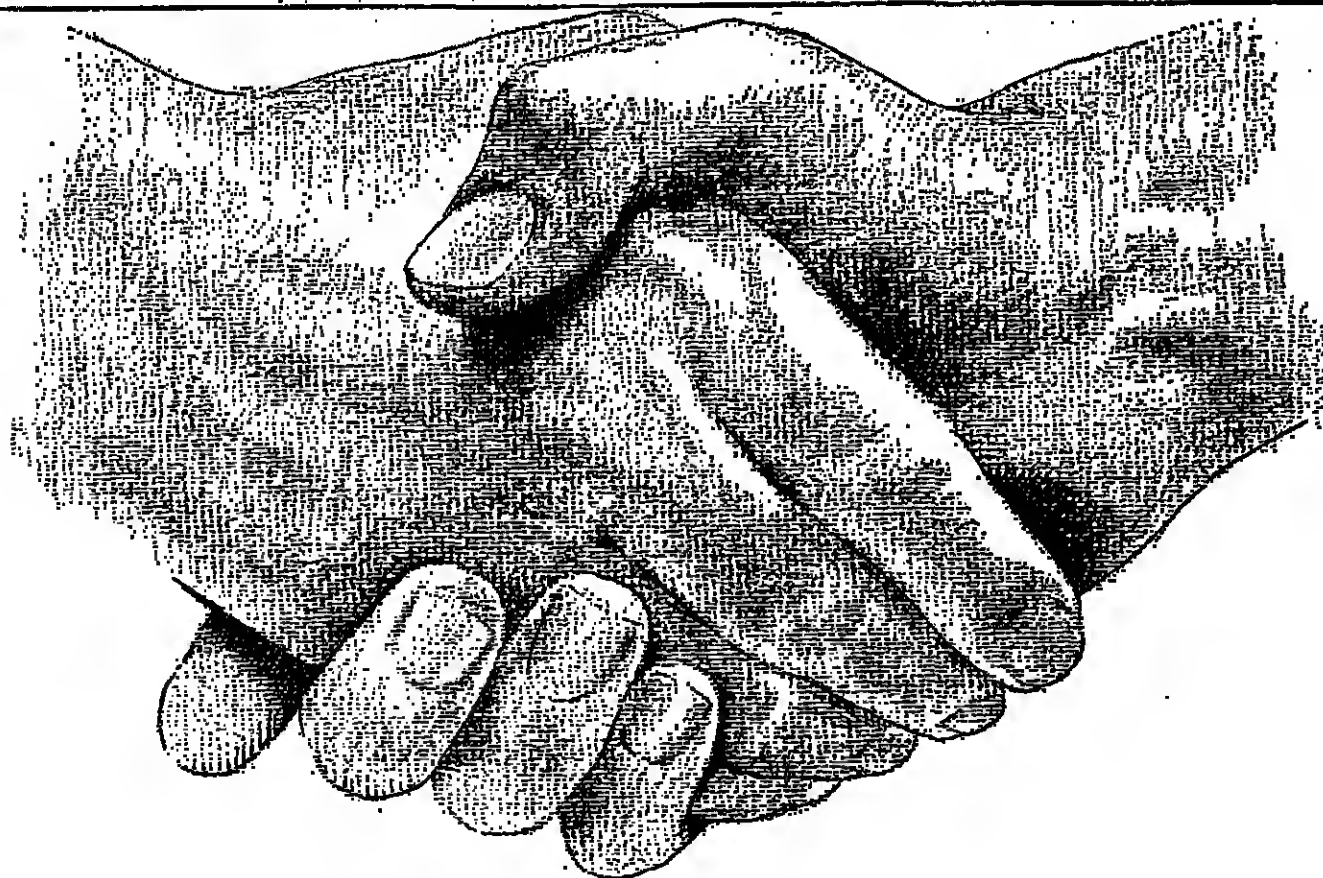


## Hutchison Whampoa Limited 1983 Group Results

	1983 HK\$M	1982 HK\$M
<b>Profits</b>		
Trading profit	1,118	1,098
Exchange gain	233	—
Share of profits less losses of associates	48	93
	<u>1,399</u>	<u>1,191</u>
Taxation	151	172
	<u>1,248</u>	<u>1,019</u>
Minority interests	81	70
	<u>1,167</u>	<u>949</u>
Extraordinary items	123	52
	<u>1,290</u>	<u>1,001</u>
<b>Earnings, per share</b>		
	<b>HK\$2.54</b>	<b>HK\$2.05</b>
<b>Ordinary Dividends, per share</b>		
— Interim	21c	15c
— Final	42c	30c
	<u>63c</u>	<u>45c</u>
<b>Special Dividend,</b>		
per ordinary share	<b>HK\$4.00</b>	—
absorbing	<b>HK\$1,779M</b>	—
By order of the board		
A.C. van der Linden		Hong Kong
Company Secretary		28th March, 1984



**Hutchison**  
HUTCHISON WHAMPOA LIMITED



## DEPEND on the Dutch bank on hand in Asia.

If you're a businessman in Hong Kong seeking to fund a project in Jakarta, or if you require trade finance for a complex agreement between Singapore and Taipei, or if you're a Japanese company making an acquisition in Colombo, why should you come to a Dutch bank?

Because the bank for all your needs in Asia is Amro Bank.

As one of the leading commercial and investment banks in The Netherlands, Amro brings to business all the resourcefulness and reliability you expect from the Dutch.

As a major force in international banking with assets of over US\$ 40 billion, we bring strength and experience as well. But we bring something further:

the distinctive qualities of Amro—speed of decision, flexibility and precision.

These are qualities which have helped our success, qualities you can depend on. So get in touch with us in any of the cities below, or contact our head office at 595 Herengracht, Amsterdam (Tel.: (20) 28 93 93. Telex: 110006 amro nl) or 119 Coolsingel, Rotterdam (Tel.: (10) 30 49 11. Telex: 22211 amro nl).

**amro bank**  
Amsterdam-Rotterdam Bank NV

Colombo, Hong Kong, Jakarta, New Delhi, Singapore, Taipei, Tokyo.

Dutch, dependable and developing worldwide.

## INTL. COMPANIES & FINANCE

Terry Dodsworth on a sector facing a spectre of financial collapse

### U.S. nuclear plant problems pile up

HARDLY A DAY has gone by over the past month, or so, without another item of ominous news rolling in from the U.S. nuclear power industry. Gigantic cost overruns, accompanied by warnings of astonishingly long delays in completion times, are by now commonplace: what is frightening the industry is the spectre of financial collapse.

In the past few days this threat has moved palpably closer. The full year accounts of three large electrical utilities have been qualified by the auditors, in some cases using surprisingly straightforward and unambiguous language.

The accountants Pear Marwick Mitchell, for example, said earlier this month that if Public Service New Hampshire (PSNH) was unable to find additional sources of finance within three weeks, and the banks declined to advance funds, the company "would be forced to seek protection from its creditors under the Bankruptcy Code."

The consequences of the turnaround in the fortunes of the hardest hit power companies border on the tragic in some cases. Utilities in the U.S. are conventionally regarded as "safe" stocks, favoured by investors who need a steady return and are happy to accept an average performance for little or no risk.

"I have been deluged with telephone calls from shareholders who want to know what has happened to their stock," says an official of Public Service of Indiana (PSI). "Many

"I have been deluged with telephone calls from shareholders who want to know what has happened to their stock..."

of them say that they have been living off the \$12,000 or whatever that the dividends brings in—and that they do not know what they will do without it." PSI announced a 65 per cent cut in its dividend in January.

A large number of these small investors have probably liquidated their positions by now, taking a heavy loss on the way. In the past six months, around 70 per cent of the company's shares have changed hands. Yet others are probably locked in for good, facing the prospect of drastically reduced income, or bankruptcy, yet unable to bear the capital cost of

selling their life's savings. The company's stock is now trading at a little under \$8 a share, against almost \$25 in July last year and a 12-month peak of around \$28. Public Service New Hampshire's shares are now around \$13, against \$21½ last July, and Long Island Lighting Company's stand at just under \$1, compared with over \$16 in July. All these falls are well in excess of the market decline.

The market answer to this kind of misfortune is, of course, that equity investors take a risk. There are plenty of speculators doing just that at present as they pick up shares which in Lico's case, to take one example, are trading at about a 60 per cent discount to stated net worth.

But the position is not quite so straightforward as the general dictates of the market place might suggest. In the first place, the nuclear utility business is a highly regulated one, in which the political organisations which make the rules can, and do, closely determine the operating parameters, including the permissible profits of the organisation. A ceiling on return on equity, for example, is enforced through-out the U.S. industry, designed to prevent the exploitation of consumers.

In principle, the concept of these hybrid concerns, public monopolies with a private funding base, has been to establish a system which gives everyone a "fair" return—shareholders, workforce and customers. They go so tightly regulated that PSI Indiana, for instance, finds it impossible to go to the banks for refinancing without the permission of the controlling state agency.

Secondly, the rules of this carefully balanced game were changed entirely by the Three Mile Island disaster five years ago. "Any company that started its nuclear investment programmes before Three Mile Island has faced the prospect of a financial crisis ever since," says one official.

The opponents of nuclear power claim that what has happened since simply shows how incompetent and shabby the industry had been in its work standards in the past. Many utilities that were not far into their investment programmes and could afford to abandon them did just that, with the result that around 90 plants have been cancelled in the last five years. But for those that remained, the problems of

adapting to a more demanding environment have proved extraordinarily difficult.

In the first place they have had to face much heavier pressure from the environmentalist lobby, backed by increased public sympathy.

But even more importantly, the Nuclear Regulatory Commission (NRC) itself came up with exacting new requirements. Construction regulations were

internally generated funds have provided only between 28 and 32 per cent of construction expenditures...

tightened up to the extent that builders complain today that they can hardly move without signing a form.

A harrowing history of the Diablo Canyon plant on the Californian coast shows how this has exposed the shortcomings of the industry. Started in 1972, it had to be completely redesigned and strengthened four years later to take account of an offshore earthquake fault. Its start-up has since been delayed because of 315 different reports of shoddy workmanship and difficulties at the plant which have had to be investigated by the NRC.

The financial impact of these new ground rules is difficult to exaggerate. The tighter standards mean spending much more money on construction, which has often had to be repeated to meet the requirements of the NRC. More crucially, however, they also involve vastly inflated financing costs.

These additional costs are closely related to the very nuclear plants are funded in the U.S. According to the Edison Electric Institute, internally generated funds have provided only between 28 and 32 per cent of construction expenditures in the last ten years.

The rest has come from massive issues of both debt and equity. In the decade to 1983, total common equity in the industry jumped from \$40.9bn to \$100.4bn, while preferred stock rose from \$14.7bn to \$28.6bn, and long-term debt from \$63.6bn to \$123.7bn.

The cost of servicing these funds as they are held for a longer period than originally planned scarcely needs to be emphasised. When the completion time on PSI Indiana's Marble Hill project was stretched a further two years

to the end of this decade, the price tag went up from \$5.18bn to \$7bn—and 75 per cent of that extra cost was in interest and dividends for the additional construction time.

At the same time, profits have come under increasing pressure. In part, this is due to a bad miscalculation of future energy trends. Back in the heady period when many of the new generation of nuclear plants were planned, forecasters were looking at demand increase in line with or even better than the 7 per cent experienced up to that date.

By contrast, between 1974 and 1983, growth averaged only 2.1 per cent, and for the rest of this decade the projections suggest a similarly modest increase of between 2.5 per cent and 3.0 per cent.

In many states, the utilities have faced a further earnings constraint. Several parts of the country allow the power generating companies to recover only a portion of their enormous construction costs—or even none at all—in their current tariffs. Customers can only be charged when a project comes on stream. Hence the troubled utilities have had to write off projects to bat down the hatches and press on until the run into the big cash generating phase when they brought their power stations into production.

As they abandon their plants, however, the companies are faced with what Wall Street would call a "double Whammy." They will be unable to gain access to the period when cash should be flowing in rather than out, and they will be forced to write off projects with book values far in excess of their own net worth—the recipe for bankruptcy.

Until a few months ago, the companies were still trying desperately to borrow their way out of this predicament. But for several utilities that option is now virtually closed.

The question now is whether the companies which have got themselves into this predicament will be allowed to go under or whether the regulators will move in and pick up the pieces. There have been no utility bankruptcies since the depression. To avoid them now, the authorities are going to have to step in with grants, push through some sort of reorganisation, or allow some undoubtedly unpopular scheme of additional tariffs to help them out of their fix.

## U.S. Government Backed Securities: Leading Investment Opportunity

New York: The current market in Government backed pass through mortgage certificates is seen as a solid and sound investment, yielding, on the average, a 12% return. Our experience, as one of the first U.S. companies to specialize in these investments, leads us to believe that the invested capital, guaranteed by agencies of the U.S. Government, is among the safest high yielding investments on the market today.

Known throughout the investment community by the rather clever names of Ginnie Mae, Fannie Mae and Freddie Mac, these securities have a strong history of a high, steady return. Since the yield is not guaranteed, even though the invested capital is protected by U.S. Government agencies, there can be a fluctuation in anticipated yield. These fluctuations have, over the years, proven to be modest ones, with the return paid to investors generally averaging a return that is higher than the anticipated yield.

Freddie Macs, Ginnie Maes and Fannie Maes are sold as shares of huge mortgage pools and are available in amounts of \$20,000 and more. The anticipated yield, which we currently estimate to be 16%, is formulated based on our analysis of this particular group's past performance and which, in our opinion, while not guaranteed, offers such attractive potential. The yield based on a 12 year average life using Freddie Mac standard bond yield table is 11%.

These sound investments are rapidly becoming one of the most

highly desirable investments on the market today. Several reasons may contribute to the current trend that shows investors are, with extreme confidence, investing large sums of capital funds in these sound, high yielding investments. Protection of capital is one important reason. Another reason for the growing popularity of these investments is the easy liquidity of the securities. As popular as they are, there is a ready market for them and they can be sold, at market value, quickly. Additionally, there are no interest penalties when you sell, unlike the penalties that must be paid or the interest that must be forfeited with some investments. Serious investors are placing a larger portion of their investment funds in a U.S. Government backed pass through mortgage pool and realizing a steady, profitable return on their investments.

Throughout most of the U.S. these securities are offered, depending on availability and prior sale, at the offices of Donald Sheldon

Government Securities, Inc. Donald Sheldon has regional offices located in: Miami Beach, Florida; Houston, Texas; Pompano Beach, Florida; Los Angeles, California; and Honolulu, Hawaii. Home Office: One Wall Street, New York City.

For more complete information on Ginnie Maes, Fannie Maes and Freddie Mac Certificates, call the nearest office of Donald Sheldon Government Securities, Inc.

In New York: (212) 747-9215  
In Florida: Pompano Beach (305) 785-3410  
Ft. Lauderdale (305) 942-2731  
Miami Beach (305) 532-6200  
In Texas: Houston (713) 975-8182  
In California: Los Angeles (213) 820-1030  
In Hawaii: Honolulu (808) 524-5263

Clip and send this coupon for details and information on Government Securities.

**DONALD SHELDON**  
**GOVERNMENT SECURITIES, INC.**

One Wall Street, New York N.Y. 10005

Please send me more information about U.S. Government Securities.

Name \_\_\_\_\_  
Home Phone \_\_\_\_\_ Bus. Phone \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

FT4-25



TECHNOLOGY

EDITED BY ALAN CANE

Apple hopes for another windfall

APPLE Computer introduced a new version of its Apple II personal computer in San Francisco yesterday with the most elaborate product launch yet seen in the computer industry. Four thousand people were expected to attend the product "exposition" titled "Apple II Forever."

Apple will not reveal the cost of the day-long event staged in the city's new convention centre, but before the end of this year, Apple plans to spend over \$20m on promotion for the new Apple IIC.

"Silicon Valley will never be the same," boasts Apple president John Sculley. With the Apple IIC launch, Apple Computer will introduce the concept of consumer marketing to the "high tech" industries of northern California, he claims.

The Apple IIC, an updated version of Apple II which represents well over 80 per cent of Apple Computer's revenues, will be aimed directly at consumers rather than business users of personal computers.

With the IIC, Apple will fight back against the encroachments of IBM, with its "PC Junior" and Commodore, with its "Commodore 64" into the home computer market.

Priced at \$1,295, the IIC will compete directly with the similarly priced IBM PC Junior. Industry analysts predict that the Apple IIC, with a full size keyboard, neater styling and more available software will easily outsell the IBM home computer.

Apple's goal is to sell 400,000 IICs before the end of calendar 1984.

For business users, the IIC has the advantage of portability. Weighing just 7.5 pounds, the IIC has a built-in keyboard and disk drive and can be hooked up to a television set or video monitor.

Apple's promotions will, how-



Steven Jobs with Apple's controversial Macintosh. New the company hopes that the latest version of the Apple II will also sell well.

ever, aim the new portable computer at the "serious home user" according to Mr Sculley. "Apple has no intention of getting into the low end of the home computer market," Mr Sculley stressed. He even prefers not to call the IIC a "home computer"—the term

competition, if we chose to get into battle, but we may not," says Mr Sculley.

Commenting upon sales of the Apple Macintosh computer, introduced three months ago, Mr Sculley reported that 65,000 units will have been sold in the 100 days since the product's

introduction, beating Apple's goal of 50,000 units. "We think that we could have sold 200,000 units if we had been able to build them," added an Apple executive. Shortages of key components for the Macintosh have however prevented Apple from further accelerating its production schedules.

"Nine months ago the world was ready to count Apple com-

puter out. We came back and captured attention with the launch of Macintosh and now with the IIC we will prove that we are a consumer marketing company. We are coming out of the shadows. We are positioned for leadership," says Mr Sculley.

In a few months, Apple is expected to introduce a small liquid crystal display unit for the IIC and a battery pack. These will make the IIC into a "carry along" computer that can be used independently. As such it will become an attractive alternative to the cumbersome "transportable" computers offered by IBM, Compaq, Kaypro and several other IBM-compatible computer makers.

While dealers and analysts who have seen the IIC say they are impressed by the new machine, the Apple IIC is not expected to cause a major stir like Apple's recently introduced Macintosh.

The IIC will be an upgrade of an earlier model. It will, however, be very important for the future of Apple computer. With over 80 per cent of the company's revenues still coming from the Apple IIC, Apple cannot afford to make a mistake with the product's successor.

InfoCorp predicts, however, that Apple's IIC will continue to sell well beside the IIC. The market research firm reckons that Apple will sell 750,000 IIC this year, up from 650,000 last year.

Apple may still have some IIC secrets hidden—perhaps some new software, or even options to make the IIC capable of running programs designed for the IBM personal computer. In the past, Apple president John Sculley has promised such an enhancement for the Apple II line. For the moment, however, such details remain closely guarded.

LOUISE KEMO

ROBOTS ASSEMBLE WINDSCREENS AT COWLEY

Eyes on Montego production line

BY GEOFFREY CHARLISH

AUSTIN ROVER, in conjunction with V&S Technology Group of Luton, has installed an intelligent robot system with "eyesight" for the assembly of front and rear windcreens on the Montego production line at Cowley.

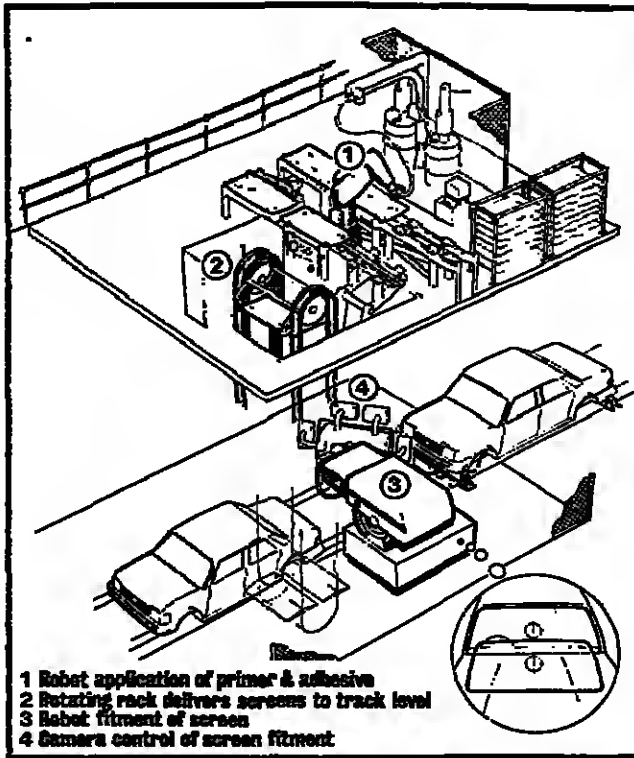
The customary rubber sealing gasket used in window assembly has been abandoned. Instead, a robot-dispensed line of sealant is run round the glass periphery and the windscreen is positioned and pressed directly into the car body. Austin Rover says that this not only improves the vehicle's aerodynamics and appearance, but produces a stronger body into the bargain.

Preparation of the windscreen takes place on a robotics platform erected several feet above the line itself. Here, primer and adhesive are applied by two Puma robots, each equipped with special grippers enabling them to interchange between the two kinds of applicator nozzle. There is a two minute cure period between the two processes during which the change is made automatically.

The Flowmatic metering and nozzle system dispenses an accurate triangular section bead of sealant, 12mm wide at the base, with an overlap joint at the start/finish point.

The vehicles have to be stopped and stabilised before the windcreens can be installed. With the assembly track in motion, the body shell is picked up by an under-body lifting device and accelerated forwards into the robot station, where it is held stationary for about 10 seconds while the two robots fit the screens.

The glass components are moved to the production line on a vertical lift consisting of platforms—loaded by the Puma robot—which move continuously



Today sees the unveiling of Austin Rover's windscreen assembly line for the Montego at Cowley. Robots with "eyes" are prominent.

up and down on an endless chain. Each platform indexes to a pick-up position at line conveyor level. Here, the windscreen is picked up by a suction disc on a vision-controlled alignment fixture carried by a Unimate 4000 robot. Two such robots are deployed, to install front and rear wind-

creens. There are three stepper motors on each robot; head which can adjust the suction screen-holding fixture to align the screen and position it 30mm

from the aperture in the car body.

After that, the robots act independently, making use of data from four line scan cameras positioned so that they can "see" the edges of the aperture. The drive motors are suitably energised to position the glass to within one millimetre.

Once the correct position is found the robot presses the screen into the aperture and returns to collect another for the next body shell.

Testing Finding faults at Hull

KINGSTON upon Hull, is the only city to run its own telephone network in parallel with British Telecom. Like BT its exchanges vary considerably in type from electro-mechanical to electronic creating a problem in identifying faults when they occur.

It was for this reason that Hull Telephone department decided to try out automatic test equipment which could quickly find faults. Fully digital exchanges which will eventually take over have in-built testing; older equipment does not.

Hull has 14 exchanges which serve 180,000 telephones over a distance of 120 square miles. It offers similar services to BT as well as information such as pigeon liberation information during the racing season and "dial a job."

The telephone department has just installed a computer system called 4tel from Teradyne, better known for its industrial test equipment. The Hull network comprises a single area network, 27 line testers and 16 visual display units. The department was one of the first in Europe to use Teradyne's test equipment.

Flexible manufacturing project by British Aerospace and Marwin

Component movement for easier automation

THE PROBLEM of satisfactory moving components and tools automatically at any time during a manufacturing process has held back the development of a true flexible manufacturing system (FMS). A joint project by the Midlands based Marwin Production Machines and British Aerospace (which is the subject of a patent) appears to have overcome a major problem and paved the way for the introduction of FMS.

It is some quarter of a century since Molini's System 24 introduced the FMS concept. This has three principles: that it should have the ability to produce at random; work unattended for long periods; be able to move components and tools automatically.

When British Aerospace ap-

proached Marwin some four years ago, Marwin designers visited Japan, the U.S. and Germany to get abreast of the state of the art, only to find that the third problem had not been, in their opinion, entirely licked.

With the aim of producing a system that would work from the first day, well proven Bosch modules were chosen for material transfer and for the development of a crate shuttle base, which is the heart of the system. The crate shuttle, in which the tools are precisely located, moves horizontally in a square system. Each metal crate holds 63 tools (9 x 7), providing 31 tools per crate for each of the two spindles. Assuming that the material is in the machine and loading has not begun, the tool selector is then

programmed to go to the required tool and load it into the tool changer. Crappers pick up first one tool and then the other. A door opens in the machine, and simultaneously loads the tools into the two spindles. The door closes and the machine starts to cut. The tool changer is then ready for the next two tools in the programme. A feature is that the tool changer is interchangeable between different makes. Spindle speeds are infinitely variable up to 12,000 rpm and power is a maximum of 20 hp.

Air sensors indicate that the crate is correctly seated, with a repeatability of positioning of ± 0.013 mm. Tool changing time is 10 seconds, spindle

use to spindle nose. A complex aerospace component can be fully machined from the solid in under 20 minutes compared with some six hours by conventional methods, including setting times.

Marwin claims its system is more than twice as fast as any comparable one, will handle different components sequentially in steel and light alloys.

The machine, called the Automax, is available in a range of three, of which the Automax 1 is within a price range of £200,000 to £350,000 depending on specification. They will deal with envelope sizes of material from 12 x 24 x 4 ins to 14 x 6 x 1 ft. The Automax 1 designed for BA's Preston plant will produce 680 different aircraft

components on a random basis from the 12 x 24 x 4 ins envelope. The operational parameters include the ability to work unmanned day and night indefinitely.

So far, of four orders for Automax 1 received by Marwin, one is on the shop floor and a third is being built. Marwin's initiative is a healthy sign that the depressed machine tool industry in the heart of the depressed West Midlands is fighting back with high technology products that puts the UK into the forefront of world leadership in FMS.

Details from Marwin Production Machines, Waddens Brook, Wednesfield, Wolverhampton WV11 3SS. Tel: 0902 65363.



The £170,000 or so that can really take you for a ride.

How many vehicles does your company operate? For a typical fleet of one hundred cars and light vans, the probable yearly cost of fuel and maintenance is around £170,000.

As many businesses have come to recognise, a card-based garage services payment system can be the ideal answer to the problem of gaining the tightest possible management control of fleet expenses—providing of course they pick the right card.

Convenient coverage—and a more convenient range of services. Dialcard is accepted at no less than 8,500 garages and filling stations.

Its coverage is therefore exceptional—and is not confined to a particular brand of fuel.



Dialcard stands out not only for convenience—a feature you can check as you drive home tonight—but also for the unusual completeness of its services.

In contrast to cards which are for fuel only, the basic Dialcard system is also valid for the other items of expenditure that running a company vehicle involves—servicing, repairs, tyres, exhausts and batteries.

To give you optimum control of vehicle operating costs, Dialcard provides you with

monthly analyses which detail each separate transaction, supplemented by comparative costs-per-mile, fuel consumption and cumulative mileage figures for every individual vehicle in your fleet.

With Dialcard, you automatically obtain the kind of accurate, up-to-date management information that helps to increase the accountability of your fleet as an overhead.

The Dialcard system simplifies expenses administration and accounting routines too.

Instead of possibly hundreds or even thousands of separate bills and till receipts, you receive one single master VAT invoice per month which covers your entire fleet of cars, vans and HGVs.

Isn't Dialcard a management tool you ought to know more about?

To find out more details, ask your secretary to get in touch with Dialcard today. Dialcard Limited, Wellington House, 154 Upper Richmond Road, London SW15 2SQ. Telephone: 01-785 7331. Telex: 28165.



How much could we cut your fleet costs by?

WHAT MAKES OUR PUMPS SO SPECIAL?

Ask any pump expert to name the acknowledged authority in fluids handling technology and he will probably say SPP (if he's a pump manufacturer himself he'll say it through clenched teeth).

If pushed he'll also admit that SPP make standard as well as custom-built pumps, controls and accessories in a whole range of sizes and for a whole range of industries. For oil and energy. For fire-fighting, waste-handling, drainage, sewerage, water supply and many other public services. For farming, heating, spraying, irrigation. For safe materials. For dangerous materials.

He might even say that our products are currently earning their keep in virtually every country in the world. SPP could help you. Call us.



Sigmund Pulsometer Pumps Limited A member of the SPP Group. Oxford Road, Reading RG3 1JD, Berkshire, England. Telephone: 0734 25555. Telex: 848 189

WANG USERS

NEW Original Equipment Manufacturers DISK DRIVES 300MB 90MB 80MB £10,250 £4,890 £5,800

Support them with Oakley Service

Oakley Computer Limited Cutting the cost of computer ownership Tel: Basingstoke (0256) 53568 Telex: 659122

WHO'S WHO in biotechnology

If you know who's who in this industry you have already booked your place among them at Biotech '84. If you don't know but need to know. Or if you've something to offer or something to gain, come to Biotech '84—you'll be in very good company. There's still time to register—telephone Online 01-868 4466.



Wembley Conference Centre London May 15 - 17 1984

For more information about the conference or exhibition please telephone Online 01-868 4466. Online Conferences Ltd, Pinner Green House, Pinner, Middx, HA5 2AE, UK

Members Vancouver Stock Exchange, Alberta Stock Exchange, Montreal Stock Exchange, NASD/M

The Partners of CONTINENTAL CARLISLE DOUGLAS Vancouver, British Columbia, Canada have pleasure in announcing the opening of their London, England, Office

CONTINENTAL CARLISLE DOUGLAS (UK) LIMITED on 25th April 1984 together with the appointment of Maurice J Blaber as Managing Director.

12th Floor, Winchester House, 77 London Wall, London EC2N 1BE. Telephone: 01-638 9545. Telex: 8813802.

Directors: A I Macphail, Chairman (Canada) · G R Fay (Canada) · D G Macdonald (Canada) M J Blaber, Managing Director (London)



UK COMPANY NEWS

Feb grows to £1.08m and lifts dividend

FURTHER GROWTH has been shown by Feb International, the manufacturer of chemicals and retail distributor of building materials. For 1983, turnover rose by £4.17m to £25.76m and profit before tax by £214,000 to £1.08m.

TR Berkeley Development Capital offer

TR Berkeley Development Capital is offering for subscription up to 3,000 ordinary shares at a price of \$50,000 per share. The company is based in Jersey and the directors say they will take whatever action is required to ensure that the company qualifies as a "distributing" fund.

Yearlings rise

The interest rate for this week's issue of local authority bonds is 9 1/2 per cent, up 1/4 of a percentage point from last week, and compares with 10 1/4 on last year's comparable date. The bonds are issued at par and are redeemable on May 1 1985.

Nurdin & Peacock rises to £12m and pays more

IN THE second half of 1983, Nurdin & Peacock recovered the ground lost at midway to finish the year with pre-tax profits ahead from £11.32m to £12m, an increase of £664,686. At the interim stage, when reporting slightly lower pre-tax profits of £3.23m (£3.37m), the directors said they would be disappointed if the company did not produce higher profits for the year.

However, the start has been encouraging, with sales continuing to show a good increase. The company will be opening its new branches at Swansea in May and Keynsham later in the summer and the chairman has high hopes that both will contribute substantially to sales this year.

Building work is well under way for a new branch at Gloucester, to be opened next year, and negotiations for other sites are at an advanced stage. The company's management team is working on various projects and is well advanced with installations of a new administration system which will enable its branches to tighten up control of their businesses.

William Morris coming to USM

ADIRERS of some of London's most famous sculptural landmarks will soon have an opportunity to invest in the company which made them. William Morris Fine Arts, which owns the 130-year-old Morris Singer metal sculpture foundry and which has recently diversified into the wallpaper trade, is coming to the Unlisted Securities Market.

For the current year, the directors are forecasting that the combined group will make not less than £700,000 pre-tax. If the combined group's profits had been available for a full year, the total net dividend would have been 0.25p, giving a gross yield of the placing share of 3.87 per cent.

William Morris is coming to the USM via a reverse takeover of rule 163 company Ceylon & Indian Planters Holdings, which has no trading interests. Since there is a £40,000 deficit on Ceylon & Indian's reserves and a third of the group's profits will not be available for distribution, being pre-acquisition profits, the directors are planning a dividend of 0.1p per share for the current year.

Promising prospects for Emess

FOR THE 18 months to end-December 1983, Emess Lighting earned taxable profits of £703,000 compared with £337,000 achieved in calendar 1982. And the current year promises further progress for the seller of its own and imported decorative lighting fittings, the directors state. They point out that after the recent Michael Black acquisition, Emess has performance tangible assets of £4.5m, some £1m in cash and liquid assets, no debt and an enlarged trading base.

Tax took £171,000 (£59,000) and extraordinary debits accounted for £46,000 (£22,000). Last August Emess commenced trading through a new division in the table lamp and lampshade market. Profit achieved during its first five months of trading was above expectations. This trend has continued during the first quarter of the current year.

In December Emess completed the acquisition of a 35 per cent shareholding for £200,000 in Mercury Plastics. No contribution from Mercury is included in the results and the directors anticipate further progress during 1984, particularly as its manufacturing capacity has recently been substantially increased.

£1m profit puts Helene well over forecast

PROFIT BEFORE tax achieved by Helene of London for 1983 is well above the forecast made with last August's rights issue. At £998,423 it compares with some £800,000 estimated and with £542,990 recorded for the year 1982.

Helene has beaten its rights issue forecast by a decent margin, although it is still a long way from making the £1.7m it produced in 1979 before the recession tore into the fashion trade. The market expected as much and left the shares unchanged at 26 1/2p, where the yield is 8.3 per cent and the multiple of earnings is 12.7. The brightest spots were childrenswear, where L.C. (Tailorwerk) has been making inroads into the U.S. on the back of its £1.5m purchase of L.C. Tailorwerk consolidated its position in children's coats.

Clement Clarke falls to £2.15m

Contrary to mid-term expectations, taxable profits of £1.2m, after extraordinary debits of £1.73m to £2.15m for 1983. The company is to pay a final dividend of 2.75p, giving a total of 4.025p (3.5p adjusted to allow for a 10p issue). At the interim stage, the directors said second-half results looked promising and they expected final results for 1983 to confirm the usual steady growth.

Rush & Tompkins up 22% and puts 1.5p on dividend

SHAREHOLDERS in the civil engineering and property investing Rush & Tompkins Group are to receive a 1.5p increase in their dividend for 1983 as the profits have hit a record. At the 30c tax level they have moved ahead by 22 per cent, from £2.31m to £2.82m.

The final dividend is 5.25p for a net total of 7.25p, compared with 6p. Over the past two years profits have risen by 63 per cent and the dividend by 71 per cent. The directors report that the current year has opened on a satisfactory basis. They are hopeful that results will once again show improvement and maintain the rising trend established over recent years.

Both in Holland and the UK, have been further extended. The group is discussing the formation of consortia able to offer full turnkey facilities for suitable projects covering design, construction, finance and operational management. After tax £946,000 (£896,000) and minorities £8,000 (£11,000), the net attributable profit for 1983 is £2.28m (£1.81m), and there are extraordinary debits of £118,000 (£45,000). Earnings are shown at 20.7p (14.4p). At the year end net asset value per share was 379p, against 341p the year earlier.

Plan Invest Group plc advertisement including a table of share capital and a list of shareholders.

Nurdin & Peacock advertisement featuring a statement by the chairman and preliminary announcement of results for 1983 and 1982.

Advertisement for a company with a trading policy, discussing market conditions and the company's performance.

Granville & Co. Limited advertisement featuring a share market table and information about Alcoa of Australia Limited bonds.



UK COMPANY NEWS

Caparo hits target with 60% advance to £1.93m

PRE-TAX PROFITS of Caparo Industries jumped by 60 per cent from £1.22m to £1.93m in 1983, in line with last month's forecast of more than £1.8m. Turnover climbed by nearly £30m to £22.1m.

The directors expect the group to show continued satisfactory growth in pre-tax profits, both from improved performance of existing businesses and from further acquisitions. This growth should be achieved with present demand levels, they state, even though these still do not show significant signs of sustained recovery in the industries which Caparo serves.

Reflecting the 1983 profits advance and confidence in the group's future, the dividend is being lifted by 30 per cent to 1.5p (1.25p) net with a final of 0.85p per share.

Earlier this month, Caparo announced the sale of its investment in Brockhouse and the decision not to proceed with an offer for the company, it estimates that this will result in a surplus on disposal of some £1.04m, before allowing for the costs of the capital injection and takeover proposals of £0.22m. The net surplus before tax of £0.82m will be included in the 1984 results.

Profits in 1983 from trading activities rose from £1.54m to £2.76m, while investment activities contributed £0.92m (£1.52m). Interest payable increased from £1.34m to £1.75m and 1983's pre-

tax results were after charging exceptional items of £0.31m. Tax took £286,000 (added £371,000) and there were also extraordinary debits of £406,000 (£728,000)—mainly relating to closures and restructuring of continuing businesses. Earnings per 25p share were 4.62p (3.22p) before tax and 3.86p (4.63p) after.

A divisional analysis of pre-tax profits shows (in 000's)—industrial services £272 (£18 loss); plants £276 (£288); engineering £180 (£38 profit); Barton division £47 (nil); property £50 (£517); less head office costs £39 (£88).

Adjusted figures in the industrial services division arose from the return to profitability—albeit modest—of CMT Industrial Supplies and a full contribution from the forklift businesses.

The small loss in engineering was a temporary factor, says the director, caused mainly by the factors of the division, which the Acme Group subsidiary. This company's assets have been disposed of since the year end and the engineering division is expected to return to profitability this year.

The Barton division traded in line with its profits forecast of not less than £1.2m and the Caparo's 1983 results included a contribution for the seven months since the acquisition. Tax took £74,000 (added £268,000) and extraordinary

Second half lifts profits at Anchor Chemical

DESPITE A difficult year, Anchor Chemical Group achieved higher taxable profits of £641,000 against £553,000, in calendar 1983.

Second half profits virtually doubled from £220,000 to £431,000 and more than offset the £120,000 shortfall incurred at mid-way. Turnover for the 12 months was nearly £1m higher at £14.23m (£13.32m).

Last year's profit included an exceptional credit of £86,000 (debit £17,000).

But the low worldwide demand, seen in the latter part of 1982, continued at the depressed level in the first half of the year and resulted in more cost cutting actions in the UK. These included further reductions in manning, and cost the company £72,000 (£75,000) in redundancy payments.

This action together with improved market conditions enabled the UK companies to trade profitably in the final quarter, the directors report.

Elsewhere, higher aggregate profits were earned by the overseas companies.

The final dividend is lifted from 2p to 2.25p for a higher total of 3.25p (3p), with earnings per share pre-tax extraordinary items shown as 3.25p (3.57p) and 6.72p (7.26p) after.

Retained profits come out at £395,000 (£212,000) after tax of £374,000 (£289,000), dividends of £66,000 (£88,000) and extraordinary debits.

USM placing gives £1.4m valuation to Plan Invest

Plan Invest, a company advising investors on portfolio investment in unit trusts is coming to the USM. It is placing a total of 1,075,000 10p shares—49 per cent of the equity—at 62p per share, valuing the entire company at £1.38m.

The issue, sponsored by stockbrokers Robert Wigram & Co. will leave chairman Mr David Trimble and managing director Mr Peter Haynes owning 51 per cent of the capital between them. Besides realising part of their investment, the issue is intended to give the group—which is based in Cheshire—wider publicity among the investing public, and also to create opportunities for acquisition in the area of financial planning.

Between 1979 and 1983, group turnover increased from £188,000 to £380,000, and pre-tax profit grew from £34,000 to £155,000. Profits in 1983 were 78 per cent ahead of the year before. No forecast is given for the current year, but management accounts indicate a satisfactory start to the year, and the directors will be "disappointed" if last year's profit figure is not bettered.

Subject to unforeseen circumstances, the directors intend to pay an interim dividend in November 1984 of 0.55p net, and a final in May 1985 of at least a similar amount. At the placing price, the expected yield is 2.5 per cent, and the historic multiple is stated as 15.8.

Besides advising on the choice of unit trusts, the group operates a full financial planning

service for its clients, covering taxation, life assurance, mortgages and school fees. A subsidiary, PILAPS, operates its insurance broking and pensions interests, and a related company, RCFI, provides a financial planning service in association with Manchester-based stockbrokers, Henry Cooke, Lumsden.

On the face of it, the flotation of Plan Invest suggests that the bull market is getting out of hand. The proposition, after all, consists of investing in a company which advises investors on what investment advisors to invest in. And certainly, the arrival on the USM of a company with 13 employees and a total market capitalisation of £1.4m tests to the limit the principle of giving small companies access to the savings of the general public. As things stand, though, there is commercial logic to the scheme. The immense proliferation of unit trusts lately—many so specialised as to be deliberately risk-prone—does argue the need for specialists to guide the layman through the maze. Arguably, we are still in a world-wide bull market, and a corresponding bear market would certainly cause small company problems. But a small group of investment specialists, with a group of loyal and wealthy clients, could well be flexible enough to weather that particular storm.

Laurence Gould pays more than forecast

PRE-TAX PROFITS at Laurence Gould, agricultural consultants, improved by 31 per cent to reach a record £245,000, against £264,000, for calendar 1983.

The company, which obtained a USM listing last June, will pay a final dividend of 1.85p to make a total 3.15p, compared with the 2.975p prospectus forecast.

Turnover, including that of the subsidiary ULG Consultants which has just won a Queen's Award for Export Achievement, also showed substantial improvement to rise from £2.92m to £3.86m. Trading profit, before costs of £46,000 (£34,000) for the staff profit sharing scheme, reached £391,000 against £298,000. Tax was up from £91,000 to £153,000.

Mr Laurence Gould, the chairman, is encouraged by the group's financial structure and will look for opportunities for expansion. The company acquired early this year the major fishery consultancy group Fisheries Development to complement its international activities, and is considering new growth in the agricultural market research sector. The company should benefit from the reduction in corporation tax and the abolition of the National Insurance Surcharge announced in the Budget. The current order book is 75 per cent contracted, and while there is still work to be sold the company is taking a long-term view.

COMPANY NEWS IN BRIEF

Net asset value at the New Australia Investment Trust, a specialist in the natural resources sector, rose by 16.3 per cent in the six months to March 31 to reach 113.9p per share against 98p for the comparable period. As was the case last year, there will be no interim payment. Last year's final amounted to 1.5p.

Pre-tax profits fell down from £128,000 to £82,000, but the directors state that profitability showed a sharp increase in the second half and expect a 20 per cent improvement in the current year.

They anticipate that this will be a record year for oil and gas exploration activity, and have placed more emphasis on the natural resources sector of the portfolio.

AB Electronic Products Group has received acceptance for 4,702,583 new ordinary shares (96 per cent) in respect of its recent one-for-three rights issue.

Acceptances to the Bowater rights issue were received in respect of approximately 90 per cent of the shares offered. The balance has been sold in the market at a premium for the benefit of provisional allottees.

In view of an improvement in profits, the directors of Moss Bros, tailors, are recommending a higher final dividend of 3.25p, against 2.5p, for a 4.79p total, and also propose to make a one-for-five scrip.

For the 12 months to January 28, 1984, pre-tax profits advanced from £502,000 to £649,000, on turnover £5.75m higher at £16.79m, after an exceptional debit of £120,000 in contribution to pension scheme, and after interest payable of £109,000 (receivable £19,000). Other income added £32,000 (£32,000). The increase is largely due, says Mr M. G. Moss the chairman, to the continuation of very tight controls over margins and expenses, together with the benefits related to the Feildales acquisition.

Net profits came out at £395,000 (£297,000), after tax of £254,000 (£205,000), and earnings per share totalled 15.67p (11.78p).

Taxable profits rose from £549,000 to £736,000 at Bossey & Hawkes, music publisher and instrument maker, for 1983, on turnover up from £1.22m to £24.2m. At the interim stage, pre-tax profits were £481,000 against losses of £559,000.

However, retiring chairman Sir Richard Young saw second half profits did not bear the same relationship to the first half, as in 1982.

Tax took £437,000 (£385,000), and minorities £300 (£18,000). There was an extraordinary credit last time of £5,000.

A final dividend has been recommended at 3p (2.2p), making 5p (3.3p) for the year. Earnings per 25p share improved to 6.5p (5.4p).

Sir Richard says 1984 started with some difficult weeks which will set back the first-half results. Progress should then be resumed in realising potential.

The effect of the reorganisation is being worked through at Bardsey, and is reflected in the

results for 1983 which show a profit before tax of £74,000, after a loss of £80,000 in the first half, and compares with a loss of £250,000 in the year 1982. The nominal dividend is 0.05p, against 0.1p in 1982.

In the current year the gradual improvement in trading has continued and the first three months are showing a better result than for the same period in 1983.

Bardsey is an industrial and finance group, with main interests in furniture, hand tools, and property investment. Its sales and interest received, rose slightly from £285,000 to £313,000. There were unchanged interest charges and expenses of £68,000 and tax absorbed £74,000, up from £71,000. The company intention on the basis of one new preferred ordinary share for every two preferred or deferred shares held.

Group income, including dividends and interest received, rose slightly from £285,000 to £313,000. There were unchanged interest charges and expenses of £68,000 and tax absorbed £74,000, up from £71,000. The company intention on the basis of one new preferred ordinary share for every two preferred or deferred shares held.

Pre-tax revenue at First Charlotte Assets Trust improved from £31,000 to £91,000 in the year to March 31 1984. Income was £221,000 against £103,000, and interest and expenses took £130,000 compared with £74,000. Tax was up from £11,000 to £27,000 and earnings per 5p share rose from 0.06p to 0.11p. The dividend is effectively raised from 0.04p to 0.09p.

At the year end, net asset value reached 12.1p—54 per cent above the original issue price, and 13 per cent higher than a year ago.

Most of the monies raised by the earlier rights issue was invested during the second half of the year and, together with the heavy dealing costs, meant that the net asset value did not fully benefit from the strong USM performance.

The fall in profits at Beauford Concrete Machinery for 1983 turned out to be £490,000, a £490,000 drop at the midway stage. Group profit before tax for the year came to £1.78m, compared with £2.2m, on turnover £2.85m lower at £15.82m.

Although that company's results are disappointing, the directors cannot be dissatisfied with them in the circumstances. The new line of serial work platforms made progress, although more slowly than expected. In South Africa, Bensa, probably completed its first full year of operations.

Tax takes £746,000 (£735,000) to leave the net profit at £1,034m (£1,477m) for earnings of 4.29p (3.1p) per share. The final dividend is 2.75p for a net total of 3.75p (3.48p).

Legal & General's growth and progress

1983 was another year of substantial growth and progress for the Legal & General Group, with pre-tax profits up 20% and the profit attributable to shareholders up 27%.

At home we increased our share of new ordinary life business, consolidating our position as Britain's second largest life assurance group. Our UK short-term insurance business also made a useful contribution to our profits.

However the difficulties in certain international markets, especially reinsurance, adversely affected the results.

Our strengths in new product development and marketing equip us extremely well to meet the

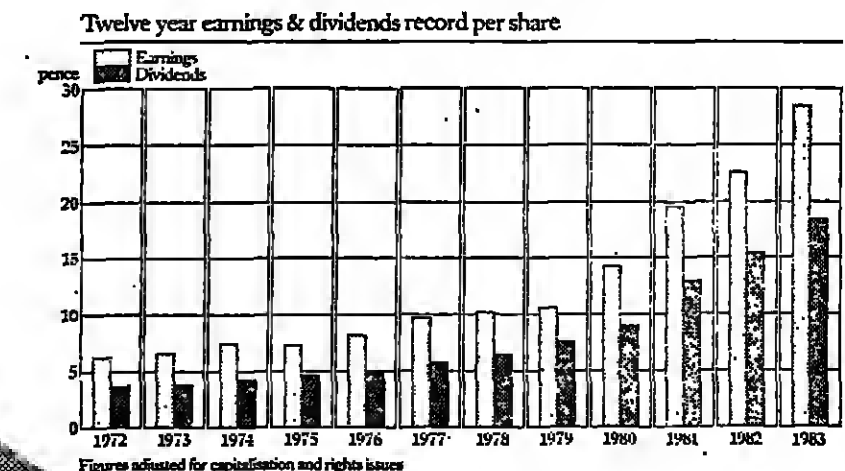
Highlights from the Accounts

	1983	1982
Profit before tax and minorities	£56.0m	£46.7m
Profit attributable to shareholders	£43.1m	£34.0m
Dividends	£28.1m	£23.3m
Earnings per share	28.46p	22.59p
Dividend per share	18.50p	15.50p
Shareholders' funds	£219.3m	£178.8m
Insurance funds	£8,181.0m	£7,138.8m

challenge of the loss of life assurance premium relief, while our considerable single premium and personal pension business remain unaffected.

On pensions' portability we favour a widening of the range of choices for pension provision but strongly oppose any legislation undermining 'final salary' schemes in favour of 'do-it-yourself' arrangements which could leave millions of employed people and their families worse off.

However, changes are likely to create new marketing opportunities from which Legal & General, as the UK's leading pensions office, is very well placed to benefit. A copy of our submission to the Committee of Inquiry is available on request.



Annual General Meeting 16 May 1984

For a copy of our 1983 Report & Accounts, and further information on our policies, please post the coupon.

To: John Neill, Legal & General Group Plc, Temple Court, 11 Queen Victoria Street, London EC4N 4TF.

**Legal & General**  
We cover the things you care for.

Please send me a copy of your 1983 Report & Accounts.

Please send me a copy of your submission on pensions

Please contact me about my insurance needs.

Name \_\_\_\_\_

Address \_\_\_\_\_

Tel No. \_\_\_\_\_

Member of the British Insurance Association and Life Offices Association.

DIVIDENDS ANNOUNCED

Company	Current payment	Date of payment	Corre- Total of sponding for last div. year	Total year
Anchor Chemical	2.25	June 9	2	3.25
Bardsey	0.05	—	0.1	0.1
Beattalls	1.4	June 13	1.3	1.3
Caparo Industries	1.5	June 11	0.75	1.25
Cement Charke	2.75	—	2.85*	4.08
Emess Lighting	4.25†	—	4.5	12.2†
English National**	3.7	July 4	3.3	5.65
English National‡	6.15	July	6.75	10.95
Feb Intl.	1.94	May 31	1.65	2.64
Futura Holdings Ltd Int.	2.75	May 14	2.25	4.25
Laurence Gould§	1.85	—	—	3.15
Helene London	1.11	June 30	1.11	1.48†
Moss Bros	3.25	July 12	2.5	4.79
Nurdin & Peacock	2.1	July 9	1.82	3.57
Rusk & Tompkins	5.25	—	4.35	7.25
Thos. Warrington	4.41	July 3	4.41	6.18

Dividends shown pence per share net except where otherwise stated. † Equivalent after allowing for scrip issue. ‡ On capital increased by rights and/or acquisition issues. § USM stock. ¶ Unquoted stock. † For 18 months to December 31 1983. ‡ For preferred ordinary shares. \*\* For deferred ordinary shares.



UK COMPANY NEWS

MINING NEWS

**Amax in profit after two years**

BY KENNETH MARSTON, MINING EDITOR

AMERICA'S Amax diversified natural resources group has returned to profitability in the first quarter of this year—but only just. Net earnings for the period amount to \$8.2m (£5.8m), or 4 cents per share, and include an extraordinary \$7.7m credit for an income tax operating loss carried forward. Also included is a \$4m gain on the sale of coal properties to Petrosbras.

Even so, it would be churlish to minimize the progress which the company has made, the latest quarter profit having followed on the heels of a worst-ever loss of \$366.2m (including \$308m write-downs) in the final quarter of 1983 when there was a total loss for the year of \$688m. The latest net profit is also the first for Amax since the end of 1981.

Mr Pierre Gousseland, the chairman, says: "The long-awaited turnaround in profitability results from strong markets for aluminium, improved prices and demand for other metals and steady profits from our energy business."

He adds that earnings from operations in the first quarter totalled \$73.1m, more than for the whole of 1983. Furthermore, Amax has repaid approximately \$200m in outstanding debt since the beginning of this year.

Sales in the latest quarter amounted to \$646m compared with \$651m in the previous three months. The main changes in operating results as compared with the final quarter of last year were a move to a profit of \$12m from a loss of \$19m in base and precious metals and an increase in profits at the energy division to \$82m from \$36m.

Aluminium contributed \$28m against \$90m while losses on molybdenum, nickel, tungsten and specialty metals fell to \$14m from \$28m. Corporate expenses were lower at \$14m against \$22m.

Shares of Amax were up 17p in London at \$17 1/2 yesterday.

**Lac Minerals to spend C\$250m at Hemlo**

CANADA'S Lac Minerals has made a definite decision to go ahead with the development of its big Williams orebody in the country's new gold camp at Hemlo in north-western Ontario.

Following the completion of feasibility study, Lac estimates the capital cost of building its mine and treatment plant at \$250m (£135m).

Ground clearing work for the initial open-pit phase has already begun, and construction of the shaft collar for the later underground operation should start by the end of this month.

Mr Peter Allen, Lac chairman, expects production to start in mid-1986 at a rate of 3,000 tonnes of ore a day, rising eventually to 8,000 tonnes. At the reported average grade of 0.17 oz of gold per tonne, this should yield something like 180,000 oz of gold a year at the proposed starting rate.

The company has 43.3m tonnes of ore in the Williams deposit, according to the latest annual report, but exploration drilling is still continuing. New reserve and grade figures should be available by the end of June.

Lac has also announced some encouraging figures for the three months to the end of March, showing net profits of C\$9.2m or 37 cents per share, up from C\$6.3m or 28 cents in the first quarter of last year.

MINING NEWS IN BRIEF

Falconbridge, Canada's No 2 in the nickel business, has already returned to profitability with earnings of C\$12.1m (£8.66m) in the final three months of last year, the first quarterly profit since the third quarter of 1981.

Mr Tom Kerr, company secretary of GRA, said: "After the change in control of the company we decided to realise a few shares. We are relatively passive in the market and are selling as and when the occasion arises."

A year ago it sold the White City Stadium for £1.2m to a company called Stock Conversion and Investment.

Southend's shares fell 4p to 49p yesterday while GRA was unchanged at 66p.

Dares Estates, a London and Hampshire-based property investment group, has completed the acquisition of Rogate, a London-based property company.

The acquisition has been completed by the issue of Rogate of £2,800,000 of 10 per cent secured loan stock 1988 of Dares.

Rogate owns a portfolio of freehold and leasehold commercial properties in and around central London, with a current market value of £3.215m. All properties are fully let, and produce a current rent roll of about £300,000 a year, and which has an estimated rental value of approximately £600,000 a year by 1988.

Relyon Group has acquired 51 per cent of Photo-Scan for £236,513 cash to be satisfied from Relyon's own resources.

Photo-Scan, based at Sunbury-on-Thames, is a specialist producer and supplier of closed-circuit television surveillance equipment for use in retail and industrial environments, and in addition offers complete integrated security systems.

El Samuel has received acceptance in respect of 7,056,502 ordinary and 9,785,941 non-voting ordinary shares of Walker Goldsmith and Silversmith.

Prior to the announcement of the recommended offer, Samuel owned 842,250 ordinary and 150,490 non-voting ordinary shares in Walker. Since then Samuel has acquired 231,000 ordinary and 15,000 non-voting ordinary shares in Walker. In addition, N. M. Rothschild and Sons, acting in concert with Samuel, has acquired 1,298,000 ordinary shares, together with shares acquired by a subsidiary of Samuel, are included in the acceptance figures.

El Samuel now owns, or has received acceptance in respect of, 8,093,752 ordinary (90.8 per cent) and 10,126,031 non-voting ordinary (89.4 per cent). The offers have now been declared unconditional in all respects and they remain open for acceptance until further notice. The share alternative has now closed.

**LADBROKE INDEX**

Based on FT Index

872-876 (+1)

Tel: 01-493 5261

BIDS AND DEALS

**Black & Edgington committed to travel and holiday sectors**

BY CHARLES BATCHELOR

Black & Edgington Holdings (B & E), part of Mr Michael Ashcroft's Hawley Group empire, yesterday announced the sale of three non-essential businesses. B & E is concentrating its resources in the travel and holiday sectors.

It has sold Clares Carlton, part of its clothing division, and a number of freehold properties to the Clares management for about £262,000.

Clares made a pre-tax loss of £204,000 on turnover of £3.8m in 1983. It had net assets of £1.5m at the year end. B & E has already provided for the loss on the sale in its 1983 accounts. The buyers may defer payment of £289,700 for up to 18 months.

B & E has also sold Thomas Black & Sons (Canada), its Canadian retailing chain, to Mr R. Brown, the managing director of the company for £335,000.

The Canadian offshoot made a pre-tax loss of £20,000 in 1983. It had net assets of £335,000 at the year end. The purchaser will pay £225,000 on completion and the balance on December 31 1984.

In a third deal B & E has sold its 50 per cent stake in Millets Shops Scotland to its partner, Millets Leisure Shops, for about £10,000.

Millets, which has about 100 stores around Britain, has been managing the seven stores involved. They have been "reasonably profitable" on an annual turnover of about £2m, Mr Fernand Duchesneau, Millets's finance director, said.

The Scottish company was set up by the two partners in 1978 and now comprises two stores in Glasgow and one each in Edinburgh, Dundee, Aberdeen, Clydebank and Swanscombe.

Millets recently opened a 2,500 sq ft store in Perth. Last week it reached an agreement to lease a Chelsea Boy shops in Scotland for £720,000 from Lewis Enterprises (Gents Wear).

Millets's shares rose 2p to 182p yesterday. B & E's was unchanged at 108p. Hawley earlier this month increased its stake in B & E from 50.1 per cent to 75 per cent.

**Thorn offshoot share offer**

Thorn EMI (Australia), part of the British electronics and electrical group, plans to offer 25 per cent of its shares to Australian investors in a move which will raise A\$26.1m (£17m).

This is to meet an undertaking given to the Australian government at the emergence of a merger between Thorn Electrical Industries Pty and EMI (Australia) in August 1981.

Thorn EMI (Australia) announced yesterday it will issue 10.44m of its own shares at A\$2.50 per share. Subscription lists will open tomorrow.

The Australian group now comprises eight businesses ranging from home entertainment to high technology. It expects after-tax operating profits to reach at least A\$11m in the year ended March 31 1984 and to pay dividend of 15 cents a share.

The issue has been underwritten by Ord Minnett, stockbrokers and members of the Sydney Stock Exchange.

BIDS AND DEALS IN BRIEF

London Sumatra is now a wholly-owned subsidiary company of Harrison's & Crossfield.

W. Canning has sold its factory in Constitution Hill, Birmingham for £100,000. The business has been transferred to the group's main manufacturing complex.

John Lewis Partnership bought in the market for cancellation 10,000 of its 5 per cent convertible preference stock at 45p per £1 unit.

In a cash and share deal, Peersless, the Birmingham-based plastics, electronics, domestic engineering and metals concern, is acquiring 100 per cent of Carlfield (UK)—manufacturers of injection, compression and structural foam moulds for the plastic moulding industry—along with the 50 per cent of Mouldmaking Design Centre not already owned by the group.

The consideration is £250,000 in cash, 90,000 Peersless ordinary shares of 25p and certain deferred payments depending on royalty income, but not to exceed £120,000.

The total net tangible assets of the three companies amount to £298,000 (MDC contributes £54,000) and total 1983 pre-tax profit of £90,000 (which includes a nine month contribution from MDC of £25,000).

Seagram Distillers, the wine and spirits group, has completed its purchase of a 75 per cent interest in the wine and spirits retailer, Oddbins UK. The purchase price was £3,075m.

Corporate Financial Services has acquired 83.78 per cent of Dura Mill. It purchased a total of 128,165 shares at 22p each from Dura's chairman Mr Fitton and his privately owned company, Associated Spinners. It also purchased 38,350 shares from other shareholders.

Corporate will make a 22p cash offer for the remaining ordinary in Dura, and will endeavour to maintain Dura's Stock Exchange listing by way of a share placing.

The following mergers are not to be referred to the Monopolies Commission: Britannia Arrow Holdings for Singer and Fredland; Clifcorp for Vickers da Costa (Holdings)—including a 29.9 per cent interest in Vickers da Costa; Hambros' 29.9 per cent interest in Strauss & Hornbush; Morgan Grenfell's 29.9 per cent interest in Pinchin, Denny.

Electra Risk Capital II has made investments totalling £1.062m in three companies under the Government's Business Expansion Scheme. These latest investments bring to £8.55m the amount invested in 25 companies.

BOARD MEETINGS

The following companies have notified dates of board meetings to the Exchange. Such meetings are usually held for the purpose of considering dividends. Official notices are not available as to whether the dividends are interim or final and the subsidiaries involved are based mainly on last year's timetable.

TODAY

Interim: British Assets Trust.

Finals: Elis and Goldstein, Ex-Londo, Fleming Universal Investment Trust, Gold and Base Metals, Morrisall's Universal, H. C. Singsby, Suez and Jackson International, Travis and Arnold, Wiggins Property Investments.

FUTURE DATES

Interims:

Azarna Investment Trust	Apr 30
Barton Transport	May 3
Cooper (Fredrick)	May 3
Lybiller	May 2
Lybil (S.)	May 3

North Sea Assets Apr 27 |

Parsons (C.) Apr 27 |

Simpson (S.) May 2 |

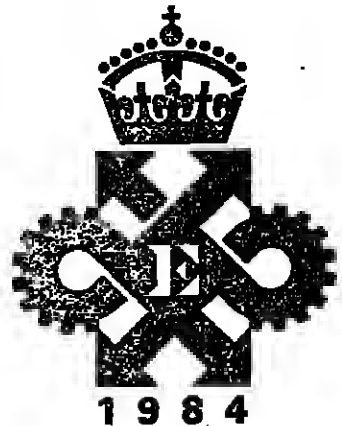
Tiger Ore & National Milling May 2 |

Trevelin Coast Land & Eng'g May 4 |

Whampton & Dudley Brew. May 24 |

Finals:

Asst Jewellery	May 2
Bilion (Perry)	May 4
Brammer	Apr 27
Clayton, Son	Apr 27
Folkes (John) Holo	May 10
Hammaman Prop Inv & Dev	Apr 30
Les Coats	Apr 27
Lilleshall	May 4
MacLellan (P. & W.)	Apr 30
Marks & Spencer	May 1
Millets Leisure Shops	May 3
Paragon	May 2
Scott and Robinson	May 3
Sumner (Frenola)	May 1
United Friendly Insurance	Apr 30
Walker (J. O.)	May 2



**Pirelli Construction Company Limited,** the British engineering contractor established in the UK for over 60 years, is proud to have received **The Queen's Award for Export Achievement.** We would like to thank our customers, employees, and all those associated with the Company at home and overseas for their contribution towards the achievement of this Award.



P.O. Box 6, Leigh Road, Eastleigh, Hampshire SO5 5YE



**ASTON MARTIN LAGONDA LIMITED IS PROUD TO ANNOUNCE THAT IT HAS GAINED THE 1984 QUEEN'S AWARD FOR EXPORT ACHIEVEMENT**

ASTON MARTIN LAGONDA LIMITED  
Tickford Street, Newport Pagnell, Buckinghamshire MK16 3AN  
Telephone: Newport Pagnell (0908) 610620 Telex: 82341



**Ash & Lacy**  
Year of continued investment—profits, dividend & earnings up

To keep each of our companies in the lead in its own technology we have invested £2.8 million in 1983. This was in addition to £2.9 million invested in 1982.

	Sales	Profit before tax	Dividend	Earnings per share
1982	£27.1m	£3.1m	18.0p	52.3p
1983	£27.6m	£3.4m	20.0p	56.3p

Galvanizers & manufacturers of perforated metal & steel cladding.  
SMETHWICK WARLEY WEST MIDLANDS

Application has been made to the Council of The Stock Exchange for the grant of permission to deal in the issued Ordinary Shares of the Company in the Unlisted Securities Market. It is emphasized that no application has been made for the Ordinary Shares of the Company to be admitted to Listing.

**WILLIAM MORRIS FINE ARTS PUBLIC LIMITED COMPANY**  
(Registered in England under the Companies Act 1948 to 1980—No. 03093)

**SHARE CAPITAL** Issued and fully paid  
£4,500,000 Ordinary Shares of 10p each 24,163,600

William Morris Fine Arts Public Limited Company's trading subsidiaries are involved in the production of specialist sculpture castings and the manufacture and distribution of standard and washable wall coverings.

A Placing of 5,000,000 New Ordinary Shares of 10p each in the Company at 10p has been arranged by Messrs. Le Mare, Martin & Co. contemporaneously with the Company's application. This is not an invitation to subscribe, shares have been offered to and are available through the Market.

Particulars giving information with regard to William Morris Fine Arts Public Limited Company are available in the Extel Unlisted Securities Market. Service and copies of such particulars may be obtained during usual business hours on any weekday (Saturdays and Public Holidays excepted) up to and including 14th May, 1984, from:

LE MARE, MARTIN & CO.  
City Gate House, 39-45 Finsbury Square, London EC2A 1LE

**Babcock GROUP RESULTS FOR 1983**

	1983 £m	1982 £m
TURNOVER	1016.3	1002.2
PROFIT BEFORE TAX	34.1	20.5
EARNINGS PER SHARE	19.4p	11.1p
ANNUAL ORDINARY DIVIDEND PER SHARE	7.7p	7.0p

Lord King, Chairman, reports—

- \* Improvement of 74% in pre-tax profits measured in constant exchange rates.
- \* Another year of positive cash flow further enhanced the financial strength of the Group.
- \* Ordinary dividend for 1983 increased by 10% to 7.7p per share.
- \* 1 for 10 bonus issue to ordinary shareholders registered on 27th April 1984.

Copies of the Annual Report may be obtained from The Secretary, Cleveland House, St. James's Square, London SW1Y 4LN.

**Babcock International plc**  
A LEADER IN WORLD-WIDE ENGINEERING

**Ruberoid AGAIN—A RECORD YEAR**

Points from the Review of the Chairman, Mr Thomas Kenny

- \* Pre-tax profit for 1983: £5.54 million. .... up 33%
- \* Turnover for 1983: £96.2 million. .... up 65%
- \* Total dividends for year: 7.10p per share. .... up 27%



**Ruberoid plc**  
1 New Oxford Street, London WC1A 1PE  
Building and surface protection products  
Contracting.  
Paper, plastics and resins



SECTION III - INTERNATIONAL MARKETS

FINANCIAL TIMES

Wednesday April 25 1984

NEW YORK STOCK EXCHANGE 30-32 AMERICAN STOCK EXCHANGE 31-32 U.S. OVER-THE-COUNTER 32, 40 WORLD STOCK MARKETS 32 LONDON STOCK EXCHANGE 33-35 UNIT TRUSTS 36-37 COMMODITIES 38 CURRENCIES 39 INTERNATIONAL CAPITAL MARKETS 40

WALL STREET

Economic data aid equilibrium

THE FLOW of statistics on the progress of the U.S. economy continued to capture all attention on Wall Street financial markets yesterday, writes Terry Byland in New York.

The latest details on consumer prices and durable goods orders appeared favourable and did something to offset the disclosure of a record rise in consumer credit in March. But the credit markets remained cautious ahead of the U.S. Treasury's announcement of the size of the budget deficit for last month, due late in the trading session.

Mr Martin Feldstein, chief economic adviser to President Ronald Reagan, described the gain of only 0.2 per cent in the consumer price index for March as an indication that the economy was not overheating. The gain was much smaller than most market predictions, as was the 0.8 per cent uptick in durable goods orders.

But the bond market, unwilling to move ahead of the Treasury statement on the budget, remained sluggish. Retail interest was still very thin, and traders who suffered further losses last week after three months of persistent setbacks - kept their positions trimmed.

Once again the stock market opened optimistically but could make little or no headway while the bond market remained nervous. The early morning round of gains, which has become an almost traditional indication of the market's underlying hopefulness, was whittled away before beginning afresh.

By 3.30 pm, the Dow Jones industrial average was 11.83 up at 1,181.33.

Corporate trading reports helped buoy the confidence of the stock market. The persistently modest level of turnover indicates a substantial weight of institu-

The closing report on Wall Street and updated U.S. market monitors were not available because of industrial action at the Financial Times' printers in Frankfurt.

tional cash in the background, waiting for a clearer view of the outlook for interest rates. But stocks are unlikely to break out of their recent trading range unless the bond market can hold steady.

Among the leaders, IBM edged up 5/4 to \$109 1/4, with Exxon at \$41 and General Electric at \$54 showing similar gains. International Telephone and Telegraph at \$38 1/4 recovered 3/4 of the loss which followed last week's announcement of poor results.

But there was little improvement over the broader range of the market. Both Nasdaq and the American Stock Exchange indices recorded minor losses at mid-session.

The latest round of sales figures from the motor industry brought no buyers for the stocks concerned. Ford at \$33 1/4 shed 3/4 and General Motors 5/4 to \$64 1/4.

Recent firmness in technology issues brought some profit-taking which left Texas Instruments \$1 off at \$137 1/4 and Teledyne a further 1 1/4 down at \$153 1/4.

AT&T remained unchanged at \$154 but the regional Bell companies held firm in the wake of their respective results. Southwestern Bell put on \$1 to \$57 1/4.

Coopervision, manufacturer of eye care products, slipped 3/4 to \$22, against the \$25 offered by Nestle of Switzerland. Carter Hawley Hale at \$27 1/4 gained 1/4 in heavy trading as the market awaited the outcome of the bid situation. Among the speculative oil issues, Mesa Petroleum jumped 3/4 to \$17 1/4.

A further dip in the federal funds rate to 9 1/4 per cent helped the credit markets, and bond prices edged higher at mid-session. Turnover remained thin, however. The key long bond put on 1/4 to 93 3/4 and smaller gains were spread throughout the range.

But rates in the Treasury bill market stayed high, with the three-month bill three basis points up at 8.65 per cent and the six-month rate five basis points up at 9.77 per cent.

A sizeable calendar of municipal issues for this week got off to a favourable start with the pricing of \$228m revenue bonds of New York Municipal Assistance to yield 8.50 per cent in 1993 and 10 per cent in 2008. A \$10m mortgage bond from Niagara Mohawk was priced at 205 basis points above the Treasury seven-year note rate after the maturity was shortened from 10 to seven years.

LONDON

Pit worries restrict a revival

CONCERN over the miners' strike and weakness on Wall Street during the previous day's trading combined to restrict interest in London. The FT Industrial Ordinary Index closed down 3.8 at 876.2.

After a tentative opening, activity increased during the afternoon session, leaving both equities and government stocks above their low points for the day at the close. Gilts were, however, the recipients of most of this late support after appearing during the morning to continue their eight-day decline.

Sterling's fall against the dollar failed to deter buyers and the upward movement continued, leaving many longs up 1/2 on balance. Shorts failed to show similar resilience and settled fractionally softer.

Chief price changes, Page 32; Details, Page 33; Share information service, Pages 34-35

HONG KONG

A PARTIAL recovery was already under way by the Hong Kong close after initial selling followed Friday's details of the planned British handover. With volume quiet, much of the sales were attributed to individuals as a lack of buyers forced prices downward, the institutions merely holding back.

Jardine Matheson, which precipitated the market's last big slide with its reincorporation plans, fell 50 cents to HK\$11.30. That news had set off a two-day retreat which backed more than 100 points off the Hang Seng index, against yesterday's 45.83 fall at 1,070.02.

SINGAPORE

CAUTION was the overriding Singapore sentiment as prices drifted lower in light trading. Losses outnumbered gains two to one and the Straits Times industrial index lost 1.96 to 993.27.

The property groups were weaker, with Selangor Properties down 17 cents to S\$4.88 and City Development 7 cents off at S\$1.85. Banks were also easier, led by Malayan Banking which closed 30 cents lower at S\$10, following news of a bonus, rights and convertible unsecured note issue.

AUSTRALIA

TRADERS were slow to return in Sydney, restraining activity in all sectors. Continued disappointment with poor results from the Eclipse One well in the Timor Sea was reflected in a further 20-cent fall to A\$11.35 by market leader BHP.

Oils were generally weaker with Weeks Australia down 7 cents to A\$1.83 and Consolidated Petroleum 14 cents lower at 78 cents.

SOUTH AFRICA

GOLD issues improved gradually in Johannesburg, although a few eased from their peaks near the close. Leading the advances, President Steyn advanced R2 to R73 while Modderfontein rose 25 cents to R7.85.

CANADA

GOLDS led Toronto downward, with weakness spreading to base metal and mineral issues, but the oil and gas sector showed somewhat more resilience. Banks were Montreal's weak spot, although industrials also fared badly. Utilities withstood much of the retreat.

TOKYO

Yet more ground gives way

MORE GROUND was lost in the Tokyo stock market yesterday, with some incentive-backed issues and regional banks providing the only spark of life in otherwise dull trading, writes Shigeo Nishiwaki of Jiji Press.

An overnight drop on Wall Street after the Easter holiday combined with small-lot selling by non-residents and an increased buying balance on margin transactions to drive investors to the sidelines.

The Nikkei-Dow market average of 225 select issues slipped 38.96 to 10,781.82, the same level as in late March. Turnover was modest at 271.87m shares, although up from the previous day's 202.96m. Declines far outnumbered advances 424 to 293, with 159 issues unchanged.

International populars remained lacklustre, reflecting light foreign selling: TDK shed Y190 at one point after a sharp fall in videotape prices, but rebounded later to end Y90 down at Y5,740. The electronics giant Hitachi lost Y3 to Y938 and Fuji Photo Film Y80 to Y1,880. The bearish tone of leading issues spread to other populars, with Matsushita Electric Industrial dropping Y20 to Y1,880, Fujitsu Y10 to Y1,260 and Kyocera Y110 to Y5,890.

Highly capitalised steels and heavy electricals eased, as did chemical, oil and non-ferrous metal stocks.

Of the incentive-supported issues to attract buyers, Tokuyama Soda climbed Y30 to Y565, after a report that the company had developed the world's first translucent nitride ceramic using aluminium nitride. It was volume leader on 10m shares.

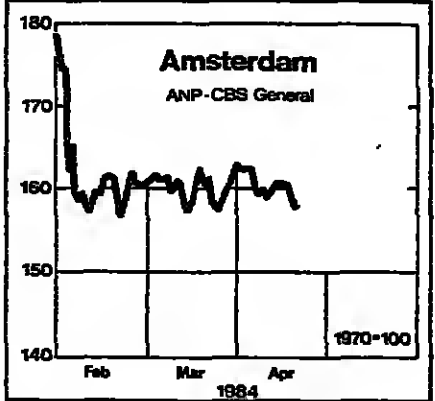
Takara Shuzo gained Y23 to Y800 on expectations of a strong business performance, while Aoki Construction firmed Y33 to Y838 on revived investor interest over its gold discovery in Brazil.

Regional banks remained firm, with Gunma Bank posting a maximum allowable daily rise of Y80 to Y465 and the Bank of Yokohama surging Y42 to Y520.

After the close, the Tokyo Stock Exchange announced that the buying balance on margin transactions on the Tokyo, Osaka and Nagoya stock exchanges at the end of last week had swollen Y26.7bn over the previous week to a record Y2,722.9bn. The margin selling balance decreased Y88.9bn to Y351.9bn.

Bond trading was extremely thin, with banks and securities companies concentrating on an auction of Y700bn worth of 5.9 per cent two-year government bonds. The issue amount was the largest on record.

Although prices moved little in the over-the-counter market, the yield on the benchmark 7.5 per cent government bonds maturing in January 1993 rose slightly to 7.125 per cent from Monday's 7.110 per cent.



EUROPE

Movements remain on modest side

A RELUCTANCE among European bourse investors to embark on any concerted campaign - either on the buying or selling side - was reflected yesterday both in the modest extent of adjustments to most leading prices and in the low turnover in which these were effected.

Factors making for restraint were a firmer dollar and the poor overnight finish in New York, but this was offset in some centres by a softening in domestic

interest rates and a continuing trickle of healthy corporate results.

An additional disincentive for Frankfurt, though, was the meeting set for today of IG Metall union leaders to map out a strike strategy in pursuit of the nationwide 35-hour week claim.

Engineering issues showed KHD off DM 2 at DM 245, steelmaker Hoesch dipped DM 1 to DM 113.50 and VW in cars was DM 2 lower at DM 198. But the respective sectors also had MAN steady at DM 146, Klockner 10 ptg firmer at DM 62 and Daimler-Benz up DM 1.50 to DM 558.

Porsche, awaiting its debut, was quoted at a when-issued DM 1,120 against an offer price of DM 780.

Banks fared poorly but electricals were firm. Public sector bonds slid as much as 40 basis points, requiring the Bundesbank to buy DM 37.5m in paper after sales last Thursday of DM 9.4m worth.

Dull Amsterdam dealings, taking the ANP-CBS general index 1.2 lower at 157.8, showed insurer Aegon FI 5.20 off at FI 125.30 on results, and Akzo in chemicals down FI 2.90 to FI 94 ahead of its move ex-dividend today.

Publiserv Elsevier emerged firm at FI 86.50 ex its five-for-one stock split as well as a dividend of FI 10 cash and one further new share for each old one held. The previous close was FI 515.

Domestic bonds were barely changed. The day's strongest performance came from Copenhagen, founded on expectations of a parliamentary accord paving the way toward lower interest rates. Banks fared the best, with Privatbanken jumping DKr 26 to DKr 304.

Ahead of further budget measures due today, Stockholm was subdued and weak. A Sfr 2 lower finish was registered by Alfa-Laval at SKr 281, Cardo at SKr 423 and Ericsson at SKr 330.

A half-point dip in Paris call money brought a firm but mixed tone. Responding to results, Beghin-Say shed FFr 10.50 to FFr 270.50 and Elf-Aquitaine FFr 2 to FFr 253 but Pernod Ricard put on FFr 5 to FFr 760 and Dumez FFr 4 to FFr 728.

Steels led Brussels higher, with Cockerill Sambre BFr 18 ahead at BFr 319. Zurich weakened, with the exception of the foods sector where Nestle gained, SwFr 40 to SwFr 5,200. Bonds drifted.

Milan gains outnumbered losses, but movements were narrow. Generale Immobiliare in properties added L31 to L349 on above average demand. Electricals led Madrid lower.

Table with multiple sections: KEY MARKET MONITORS (line graphs for FT-Actuaries All-Share Index, Dow Jones Industrial Average, FT-Industrial Ordinary Index), STOCK MARKET INDICES (New York, London, Tokyo, Australia, Austria, Belgium, Canada, Denmark, France, West Germany, Hong Kong, Italy, Netherlands, Norway, Singapore, South Africa, Spain, Sweden, Switzerland, World), CURRENCIES (U.S. Dollar, Sterling, Euro-currencies), INTEREST RATES (Euro-currencies, FT London Interbank), U.S. BONDS (Treasury, Corporate), FINANCIAL FUTURES (Chicago, U.S. Treasury Bonds, U.S. Treasury Bills, Certificates of Deposit), LONDON (Three-month Eurodollar, 20-year National GBR), COMMODITIES (Silver, Copper, Coffee, Oil).

Advertisement for Arab Banking Corporation (ABC) and Banco Atlantico S.A. Includes text: 'This announcement appears as a matter of record only April, 1984', 'Arab Banking Corporation (ABC) Banco Exterior de España S.A. Banco Arabe Español S.A. "Aresbank"', 'BANCO ATLANTICO S.A.', 'Corporate Finance Department Aresbank Madrid', 'Investment Banking Division Arab Banking Corporation London'. Includes BAA logo and ABO logo.



Prices at 3pm, April 24

NEW YORK STOCK EXCHANGE COMPOSITE PRICES

Main table containing stock prices, organized into columns with headers for 12 Month, High, Low, and various stock symbols. Includes sub-sections like G-G-G, D-D-D, C-C-C, H-H-H, and O-O-O.

Continued on Page 31

Handwritten signature or scribble at the bottom center of the page.



Handwritten note in Arabic script: "هذا صحتك" (This is your health)

AMERICAN STOCK EXCHANGE COMPOSITE PRICES

Prices at 3pm, April 24

Main table of American stock exchange composite prices, organized by sector (A-Z) and listing various stocks with their prices and changes.

Continued on Page 32

NEW YORK STOCK EXCHANGE COMPOSITE PRICES

Main table of New York stock exchange composite prices, organized by sector (A-Z) and listing various stocks with their prices and changes.

Notes and disclaimers regarding the data, including: "Sales figures are unaudited. Yearly high and low reflect the previous 52 weeks plus the current week..."

WORLD VALUE OF THE DOLLAR every Friday in the Financial Times



WORLD STOCK MARKETS

AUSTRIA

Table with columns: April 24, Price, +/-, Stock names like oetantstalt, oesser, oenderbank.

GERMANY

Table with columns: April 24, Price, +/-, Stock names like AEG-Tel, Allianz, Bayer.

NETHERLANDS

Table with columns: April 24, Price, +/-, Stock names like ADF Holding, AEG, AEGIS.

FRANCE

Table with columns: April 24, Price, +/-, Stock names like Air France, Alcatel, Bouygues.

ITALY

Table with columns: April 24, Price, +/-, Stock names like Banca Com. Ital., Eni, IRI.

SPAIN

Table with columns: April 24, Price, +/-, Stock names like Banco de España, Telefónica.

SWITZERLAND

Table with columns: April 24, Price, +/-, Stock names like ABB, Nestlé, Novartis.

NETHERLANDS

Table with columns: April 24, Price, +/-, Stock names like ADF Holding, AEG, AEGIS.

NETHERLANDS

Table with columns: April 24, Price, +/-, Stock names like ADF Holding, AEG, AEGIS.

NETHERLANDS

Table with columns: April 24, Price, +/-, Stock names like ADF Holding, AEG, AEGIS.

GERMANY

Table with columns: April 24, Price, +/-, Stock names like AEG-Tel, Allianz, Bayer.

NETHERLANDS

Table with columns: April 24, Price, +/-, Stock names like ADF Holding, AEG, AEGIS.

FRANCE

Table with columns: April 24, Price, +/-, Stock names like Air France, Alcatel, Bouygues.

ITALY

Table with columns: April 24, Price, +/-, Stock names like Banca Com. Ital., Eni, IRI.

SPAIN

Table with columns: April 24, Price, +/-, Stock names like Banco de España, Telefónica.

SWITZERLAND

Table with columns: April 24, Price, +/-, Stock names like ABB, Nestlé, Novartis.

NETHERLANDS

Table with columns: April 24, Price, +/-, Stock names like ADF Holding, AEG, AEGIS.

NETHERLANDS

Table with columns: April 24, Price, +/-, Stock names like ADF Holding, AEG, AEGIS.

NETHERLANDS

Table with columns: April 24, Price, +/-, Stock names like ADF Holding, AEG, AEGIS.

NORWAY

Table with columns: April 24, Price, +/-, Stock names like Bergens Bank, Christiania Bk.

SPAIN

Table with columns: April 24, Price, +/-, Stock names like Banco de España, Telefónica.

SWEDEN

Table with columns: April 24, Price, +/-, Stock names like ASEA, Volvo.

NETHERLANDS

Table with columns: April 24, Price, +/-, Stock names like ADF Holding, AEG, AEGIS.

NETHERLANDS

Table with columns: April 24, Price, +/-, Stock names like ADF Holding, AEG, AEGIS.

NETHERLANDS

Table with columns: April 24, Price, +/-, Stock names like ADF Holding, AEG, AEGIS.

NETHERLANDS

Table with columns: April 24, Price, +/-, Stock names like ADF Holding, AEG, AEGIS.

NETHERLANDS

Table with columns: April 24, Price, +/-, Stock names like ADF Holding, AEG, AEGIS.

NETHERLANDS

Table with columns: April 24, Price, +/-, Stock names like ADF Holding, AEG, AEGIS.

AUSTRALIA (continued)

Table with columns: April 24, Price, +/-, Stock names like Gen Prop Trust, Hartwood Energy.

HONG KONG

Table with columns: April 24, Price, +/-, Stock names like Bank East Asia, China Light.

JAPAN

Table with columns: April 24, Price, +/-, Stock names like Ajinomoto, Asahi Beer.

JAPAN

Table with columns: April 24, Price, +/-, Stock names like Ajinomoto, Asahi Beer.

JAPAN

Table with columns: April 24, Price, +/-, Stock names like Ajinomoto, Asahi Beer.

JAPAN

Table with columns: April 24, Price, +/-, Stock names like Ajinomoto, Asahi Beer.

JAPAN

Table with columns: April 24, Price, +/-, Stock names like Ajinomoto, Asahi Beer.

JAPAN

Table with columns: April 24, Price, +/-, Stock names like Ajinomoto, Asahi Beer.

JAPAN

Table with columns: April 24, Price, +/-, Stock names like Ajinomoto, Asahi Beer.

AUSTRALIA (continued)

Table with columns: April 24, Price, +/-, Stock names like Gen Prop Trust, Hartwood Energy.

HONG KONG

Table with columns: April 24, Price, +/-, Stock names like Bank East Asia, China Light.

JAPAN

Table with columns: April 24, Price, +/-, Stock names like Ajinomoto, Asahi Beer.

JAPAN

Table with columns: April 24, Price, +/-, Stock names like Ajinomoto, Asahi Beer.

JAPAN

Table with columns: April 24, Price, +/-, Stock names like Ajinomoto, Asahi Beer.

JAPAN

Table with columns: April 24, Price, +/-, Stock names like Ajinomoto, Asahi Beer.

JAPAN

Table with columns: April 24, Price, +/-, Stock names like Ajinomoto, Asahi Beer.

JAPAN

Table with columns: April 24, Price, +/-, Stock names like Ajinomoto, Asahi Beer.

JAPAN

Table with columns: April 24, Price, +/-, Stock names like Ajinomoto, Asahi Beer.

AUSTRALIA (continued)

Table with columns: April 24, Price, +/-, Stock names like Gen Prop Trust, Hartwood Energy.

HONG KONG

Table with columns: April 24, Price, +/-, Stock names like Bank East Asia, China Light.

JAPAN

Table with columns: April 24, Price, +/-, Stock names like Ajinomoto, Asahi Beer.

JAPAN

Table with columns: April 24, Price, +/-, Stock names like Ajinomoto, Asahi Beer.

JAPAN

Table with columns: April 24, Price, +/-, Stock names like Ajinomoto, Asahi Beer.

JAPAN

Table with columns: April 24, Price, +/-, Stock names like Ajinomoto, Asahi Beer.

JAPAN

Table with columns: April 24, Price, +/-, Stock names like Ajinomoto, Asahi Beer.

JAPAN

Table with columns: April 24, Price, +/-, Stock names like Ajinomoto, Asahi Beer.

JAPAN

Table with columns: April 24, Price, +/-, Stock names like Ajinomoto, Asahi Beer.

OVER-THE-COUNTER

Large table listing various over-the-counter stocks with columns for Stock, Sales, High, Low, Last, Day.

OVER-THE-COUNTER

Large table listing various over-the-counter stocks with columns for Stock, Sales, High, Low, Last, Day.

OVER-THE-COUNTER

Large table listing various over-the-counter stocks with columns for Stock, Sales, High, Low, Last, Day.

OVER-THE-COUNTER

Large table listing various over-the-counter stocks with columns for Stock, Sales, High, Low, Last, Day.

Nasdaq national market, 3pm prices

LONDON

Chief price changes (in pence unless otherwise indicated)

Table of London stock price changes, including sections for RISES and FALLS.

LONDON

Chief price changes (in pence unless otherwise indicated)

Table of London stock price changes, including sections for RISES and FALLS.

LONDON

Chief price changes (in pence unless otherwise indicated)

Table of London stock price changes, including sections for RISES and FALLS.

LONDON

Chief price changes (in pence unless otherwise indicated)

Table of London stock price changes, including sections for RISES and FALLS.

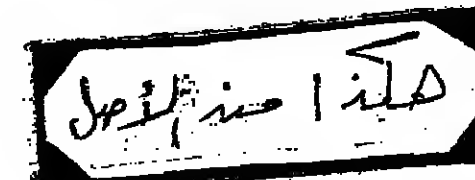
Continued on Page 40

INTERNATIONAL GUIDE TO THE ARTS every Friday in the Financial Times

AMERICAN STOCK EXCHANGE PRICES

Large table of American stock exchange prices with columns for Month, High, Low, Close, Div, etc.

WORLD VALUE OF THE POUND every Tuesday in the Financial Times









FT LONDON SHARE INFORMATION SERVICE

IDC Design, Construct & Engineer BUILDING SUCCESS

BRITISH FUNDS Table with columns for Name, Price, and % Change

Five to Fifteen Years Table with columns for Name, Price, and % Change

Over Fifteen Years Table with columns for Name, Price, and % Change

Undated Table with columns for Name, Price, and % Change

Index-Linked Table with columns for Name, Price, and % Change

INT. BANK AND O'SEAS GOVT STERLING ISSUES Table with columns for Name, Price, and % Change

CORPORATION LOANS Table with columns for Name, Price, and % Change

COMMONWEALTH AND AFRICAN LOANS Table with columns for Name, Price, and % Change

LOANS Building Societies Table with columns for Name, Price, and % Change

Public Board and Ind. Financial Table with columns for Name, Price, and % Change

FOREIGN BONDS & RAILS Table with columns for Name, Price, and % Change

AMERICANS

AMERICANS Table with columns for Name, Price, and % Change

BUILDING INDUSTRY, TIMBER AND ROADS

BUILDING INDUSTRY, TIMBER AND ROADS Table with columns for Name, Price, and % Change

DRAPERY & STORES—Cont.

DRAPERY & STORES—Cont. Table with columns for Name, Price, and % Change

ENGINEERING—Continued

ENGINEERING—Continued Table with columns for Name, Price, and % Change

INDUSTRIALS (Miscel.)

INDUSTRIALS (Miscel.) Table with columns for Name, Price, and % Change

CANADIANS

CANADIANS Table with columns for Name, Price, and % Change

BANKS, HP & LEASING

BANKS, HP & LEASING Table with columns for Name, Price, and % Change

CHEMICALS, PLASTICS

CHEMICALS, PLASTICS Table with columns for Name, Price, and % Change

FOOD, GROCERIES, ETC.

FOOD, GROCERIES, ETC. Table with columns for Name, Price, and % Change

DRAPERY AND STORES

DRAPERY AND STORES Table with columns for Name, Price, and % Change

BEERS, WINES & SPIRITS

BEERS, WINES & SPIRITS Table with columns for Name, Price, and % Change

ENGINEERING

ENGINEERING Table with columns for Name, Price, and % Change

HOTELS AND CATERERS

HOTELS AND CATERERS Table with columns for Name, Price, and % Change

Handwritten note

Handwritten note: "John 1/10"

Handwritten note

Handwritten note: "John 1/10"



Handwritten note in Arabic script: "هذا هو العنوان"

INDUSTRIALS - Continued

Table of industrial stocks including NCO Group, NCC Group, NCC Group, etc. with columns for High, Low, Stock, Price, and % Change.

LEISURE - Continued

Table of leisure stocks including Leisure Group, Leisure Group, Leisure Group, etc. with columns for High, Low, Stock, Price, and % Change.

PROPERTY - Continued

Table of property stocks including Property Group, Property Group, Property Group, etc. with columns for High, Low, Stock, Price, and % Change.

INVESTMENT TRUSTS - Cont.

Table of investment trusts including Investment Trusts, Investment Trusts, Investment Trusts, etc. with columns for High, Low, Stock, Price, and % Change.

OIL AND GAS - Continued

Table of oil and gas stocks including Oil and Gas, Oil and Gas, Oil and Gas, etc. with columns for High, Low, Stock, Price, and % Change.

International Finance DAIWA SECURITIES logo and header.

MINES - Continued

Table of mine stocks including Manganese, Manganese, Manganese, etc. with columns for High, Low, Stock, Price, and % Change.

Tins

Table of tin stocks including Tin, Tin, Tin, etc. with columns for High, Low, Stock, Price, and % Change.

Miscellaneous

Table of miscellaneous stocks including Miscellaneous, Miscellaneous, Miscellaneous, etc. with columns for High, Low, Stock, Price, and % Change.

NOTES

Textual notes and disclaimers regarding the financial data and market information.

INSURANCES

Table of insurance stocks including Insurance, Insurance, Insurance, etc. with columns for High, Low, Stock, Price, and % Change.

PROPERTY

Table of property stocks including Property, Property, Property, etc. with columns for High, Low, Stock, Price, and % Change.

TRUSTS, FINANCE, LAND

Table of trusts, finance, and land stocks including Trusts, Finance, Land, etc. with columns for High, Low, Stock, Price, and % Change.

FINANCE, LAND, ETC

Table of finance, land, and other stocks including Finance, Land, Etc. with columns for High, Low, Stock, Price, and % Change.

OIL AND GAS

Table of oil and gas stocks including Oil and Gas, Oil and Gas, Oil and Gas, etc. with columns for High, Low, Stock, Price, and % Change.

REGIONAL & IRISH STOCKS

Table of regional and Irish stocks including Regional, Irish, Regional, etc. with columns for High, Low, Stock, Price, and % Change.

OPTIONS - 3-month call rates

Table of 3-month call rates for various options including Options, Options, Options, etc.

LEISURE

Table of leisure stocks including Leisure, Leisure, Leisure, etc. with columns for High, Low, Stock, Price, and % Change.

PROPERTY

Table of property stocks including Property, Property, Property, etc. with columns for High, Low, Stock, Price, and % Change.

TRUSTS, FINANCE, LAND

Table of trusts, finance, and land stocks including Trusts, Finance, Land, etc. with columns for High, Low, Stock, Price, and % Change.

OIL AND GAS

Table of oil and gas stocks including Oil and Gas, Oil and Gas, Oil and Gas, etc. with columns for High, Low, Stock, Price, and % Change.

DIAMOND AND PLATINUM

Table of diamond and platinum stocks including Diamond, Platinum, Diamond, etc. with columns for High, Low, Stock, Price, and % Change.

Central African

Table of Central African stocks including Central African, Central African, Central African, etc. with columns for High, Low, Stock, Price, and % Change.







Handwritten Arabic text at the top of the page.

INSURANCE & OVERSEAS MANAGED FUNDS

Table of financial data for various insurance and managed funds, including Barclays Life Ass., G.Y. Management Ltd., and others.

Table of financial data for various insurance and managed funds, including Layton Life Assurance, Property Growth Assur. Co. Ltd., and others.

Table of financial data for various insurance and managed funds, including Standard Life Assurance Company, Bank of America International S.A., and others.

Table of financial data for various insurance and managed funds, including Member Pacific Fund Mgmt. Ltd., Richmond Life Ass. Ltd., and others.

OFFSHORE AND OVERSEAS

Table of financial data for offshore and overseas managed funds, including Adig Investment, Vanguard Life Assurance, and others.

NOTES section providing additional information and disclaimers regarding the fund data.



COMMODITIES AND AGRICULTURE

Weather boosts potato price

By Richard Mooney
CONCERN ABOUT prospects for the coming UK harvest sent distant positions on the London potato futures market sharply higher yesterday.

The April 1984 position ended the day 29.50 up at 296 tonne, while February 1984 finished 27.50 up at 281.50 a tonne.

Dealers said the rise was in response to the recent dry weather. Drought fears were beginning to affect traders thinking they explained, following one of the driest Easters on record.

Some traders thought this reaction was somewhat premature, however. "This time last year the wet weather was driving prices up," said one.

Plans to replace the Government price guarantees with support-buying financed by an increased producer levy were announced by the FMB at the end of February.

"We regard it as a vote of confidence by potato producers generally. All concerned must now work together to ensure that we give practical effect to the negotiated arrangements for the benefit of the potato industry as a whole."

Copper leads decline in metal market

BY JOHN EDWARDS, COMMODITIES EDITOR
COPPER and aluminium led a general decline in London metal markets yesterday, in spite of a downturn in the value of sterling against the dollar.

Traders said there was some disappointment that copper stocks held in the LME warehouses fell last week by only 2,925 to 280,200 tonnes.

Although this was the tenth successive weekly decline in stocks, the fall was considerably lower than some traders had been predicting.

Some traders thought this reaction was somewhat premature, however. "This time last year the wet weather was driving prices up," said one.

Plans to replace the Government price guarantees with support-buying financed by an increased producer levy were announced by the FMB at the end of February.

"We regard it as a vote of confidence by potato producers generally. All concerned must now work together to ensure that we give practical effect to the negotiated arrangements for the benefit of the potato industry as a whole."

Moves to spice up pepper market

BY R.C. MURPHY IN BOMBAY
REPRESENTATIVES of leading pepper producing countries met in Kuala Lumpur yesterday under the auspices of the International Pepper Community to discuss a rise in the minimum export price of pepper.

Many countries consider the present floor price of 70 cents per pound, unrealistic in the context of world inflation and sharp increases in production costs.

The present bureaucracy of pepper prices is due to a setback by the Brazilian pepper crop, which fell to less than 20,000 tonnes in 1983 from the peak of 40,000 tonnes the previous year.

Some traders thought this reaction was somewhat premature, however. "This time last year the wet weather was driving prices up," said one.

Plans to replace the Government price guarantees with support-buying financed by an increased producer levy were announced by the FMB at the end of February.

"We regard it as a vote of confidence by potato producers generally. All concerned must now work together to ensure that we give practical effect to the negotiated arrangements for the benefit of the potato industry as a whole."

Indian producers ordered to sell 70% of bulk teas through auction

BY JOHN ELLIOTT IN NEW DELHI
The Indian Government has stepped up its attempts to bring sales and pricing of tea under control by introducing a Parliamentary order requiring all tea producers to sell a minimum of 70 per cent of their bulk teas through public auctions.

All manufacturers, auction organisers and brokers must obtain a licence once the order comes into force in three months' time.

The Government started tightening up its control of the tea industry after it introduced its ban on CTC (crush, tear and curl) tea exports last Christmas in an attempt to curtail domestic price rises.

Some traders thought this reaction was somewhat premature, however. "This time last year the wet weather was driving prices up," said one.

Plans to replace the Government price guarantees with support-buying financed by an increased producer levy were announced by the FMB at the end of February.

"We regard it as a vote of confidence by potato producers generally. All concerned must now work together to ensure that we give practical effect to the negotiated arrangements for the benefit of the potato industry as a whole."

Surge in cocoa price continues

LONDON COCOA futures prices continued their pre-Easter upsurge when the market reopened yesterday.

New York trading on Monday had indicated a rise of 515 or so for London values, but this level was quickly left behind as fresh buying took nearby prices the 540 permissible limit higher in morning trading.

Further gains were made when trading resumed following the mandatory 15-minute break and the July quotation ended the day 248 up at 1,894 a tonne.

Dealers attributed the rise to a general reassessment of the likely end-season production deficit, now put at least at 100,000 tonnes because of a lower than expected Brazilian harvest and better than expected bean grindings in leading consuming countries.

Some traders thought this reaction was somewhat premature, however. "This time last year the wet weather was driving prices up," said one.

Plans to replace the Government price guarantees with support-buying financed by an increased producer levy were announced by the FMB at the end of February.

U.S. maize stocks higher than expected

BY NANCY DUNNE IN WASHINGTON
AN eagerly-awaited report released Monday by the U.S. Department of Agriculture indicated that there is more maize in stocks than traders had expected.

The stocks report, normally not a critical one, was of particular interest this year due to tight supplies resulting from last year's drought and payment-in-kind programmes and earlier English leaf blight.

Some traders thought this reaction was somewhat premature, however. "This time last year the wet weather was driving prices up," said one.

Plans to replace the Government price guarantees with support-buying financed by an increased producer levy were announced by the FMB at the end of February.

"We regard it as a vote of confidence by potato producers generally. All concerned must now work together to ensure that we give practical effect to the negotiated arrangements for the benefit of the potato industry as a whole."

PRICE CHANGES

Table with columns: In tonnes unless stated otherwise, Apr. 24 1984, + or -, Month ago. Lists prices for Metals, Oil, and other commodities.

BRITISH COMMODITY PRICES

Table with columns: Apr. 24 1984, + or -, Month ago. Lists prices for BASE METALS, COPPER, TIN, LEAD, ZINC, and ALUMINIUM.

BASE METALS

Table with columns: Apr. 24 1984, + or -, Month ago. Lists prices for various base metals.

INDICES

Table with columns: Apr. 18, 1984, Apr. 17, Apr. 16, Apr. 15. Lists various financial indices.

LONDON OIL

Table with columns: Month, Year days, + or -, Business Done. Lists oil prices for various grades.

PRODUCTS—North West Europe

Table with columns: Month, Year days, + or -, Business Done. Lists prices for various products.

COPPER

Table with columns: Apr. 24 1984, + or -, Month ago. Lists copper prices.

WOOL FUTURES

Table with columns: Apr. 18, 1984, Apr. 17, Apr. 16, Apr. 15. Lists wool futures prices.

SPOT PRICES

Table with columns: Month, Year days, + or -, Business Done. Lists spot prices for various commodities.

GAS OIL FUTURES

Table with columns: Month, Year days, + or -, Business Done. Lists gas oil futures prices.

TIN

Table with columns: Apr. 24 1984, + or -, Month ago. Lists tin prices.

REUTERS

Table with columns: Apr. 24, 1984, Apr. 23, Apr. 22, Apr. 21. Lists Reuters market data.

GOLD MARKETS

Table with columns: Apr. 24 1984, + or -, Month ago. Lists gold market prices.

LONDON FUTURES

Table with columns: Month, Year days, + or -, Business Done. Lists London futures prices.

LEAD

Table with columns: Apr. 24 1984, + or -, Month ago. Lists lead prices.

MOODY'S

Table with columns: Apr. 18, 1984, Apr. 17, Apr. 16, Apr. 15. Lists Moody's market data.

EUROPEAN MARKETS

Table with columns: Apr. 20, Apr. 19. Lists European market prices.

ALUMINIUM

Table with columns: Apr. 24 1984, + or -, Month ago. Lists aluminium prices.

ZINC

Table with columns: Apr. 24 1984, + or -, Month ago. Lists zinc prices.

MEAT/FISH

Table with columns: Apr. 18, 1984, Apr. 17, Apr. 16, Apr. 15. Lists meat and fish prices.

SOYABEAN MEAL

Table with columns: Apr. 24 1984, + or -, Month ago. Lists soyabean meal prices.

NICKEL

Table with columns: Apr. 24 1984, + or -, Month ago. Lists nickel prices.

WHEAT

Table with columns: Apr. 24 1984, + or -, Month ago. Lists wheat prices.

BARLEY

Table with columns: Apr. 24 1984, + or -, Month ago. Lists barley prices.

GRAINS

Table with columns: Apr. 24 1984, + or -, Month ago. Lists grain prices.

COFFEE

Table with columns: Apr. 24 1984, + or -, Month ago. Lists coffee prices.

SOYABEAN OIL

Table with columns: Apr. 24 1984, + or -, Month ago. Lists soyabean oil prices.

SUGAR

Table with columns: Apr. 24 1984, + or -, Month ago. Lists sugar prices.

WHEAT

Table with columns: Apr. 24 1984, + or -, Month ago. Lists wheat prices.

BARLEY

Table with columns: Apr. 24 1984, + or -, Month ago. Lists barley prices.

GRAINS

Table with columns: Apr. 24 1984, + or -, Month ago. Lists grain prices.

COFFEE

Table with columns: Apr. 24 1984, + or -, Month ago. Lists coffee prices.

SOYABEAN OIL

Table with columns: Apr. 24 1984, + or -, Month ago. Lists soyabean oil prices.

SUGAR

Table with columns: Apr. 24 1984, + or -, Month ago. Lists sugar prices.

WHEAT

Table with columns: Apr. 24 1984, + or -, Month ago. Lists wheat prices.

BARLEY

Table with columns: Apr. 24 1984, + or -, Month ago. Lists barley prices.

GRAINS

Table with columns: Apr. 24 1984, + or -, Month ago. Lists grain prices.

COFFEE

Table with columns: Apr. 24 1984, + or -, Month ago. Lists coffee prices.

SOYABEAN OIL

Table with columns: Apr. 24 1984, + or -, Month ago. Lists soyabean oil prices.

SUGAR

Table with columns: Apr. 24 1984, + or -, Month ago. Lists sugar prices.

WHEAT

Table with columns: Apr. 24 1984, + or -, Month ago. Lists wheat prices.

BARLEY

Table with columns: Apr. 24 1984, + or -, Month ago. Lists barley prices.

GRAINS

Table with columns: Apr. 24 1984, + or -, Month ago. Lists grain prices.

COFFEE

Table with columns: Apr. 24 1984, + or -, Month ago. Lists coffee prices.

SOYABEAN OIL

Table with columns: Apr. 24 1984, + or -, Month ago. Lists soyabean oil prices.

SUGAR

Table with columns: Apr. 24 1984, + or -, Month ago. Lists sugar prices.

WHEAT

Table with columns: Apr. 24 1984, + or -, Month ago. Lists wheat prices.

BARLEY

Table with columns: Apr. 24 1984, + or -, Month ago. Lists barley prices.

GRAINS

Table with columns: Apr. 24 1984, + or -, Month ago. Lists grain prices.

COFFEE

Table with columns: Apr. 24 1984, + or -, Month ago. Lists coffee prices.

SOYABEAN OIL

Table with columns: Apr. 24 1984, + or -, Month ago. Lists soyabean oil prices.

SUGAR

Table with columns: Apr. 24 1984, + or -, Month ago. Lists sugar prices.

WHEAT

Table with columns: Apr. 24 1984, + or -, Month ago. Lists wheat prices.

BARLEY

Table with columns: Apr. 24 1984, + or -, Month ago. Lists barley prices.

GRAINS

Table with columns: Apr. 24 1984, + or -, Month ago. Lists grain prices.

COFFEE

Table with columns: Apr. 24 1984, + or -, Month ago. Lists coffee prices.

SOYABEAN OIL

Table with columns: Apr. 24 1984, + or -, Month ago. Lists soyabean oil prices.

SUGAR

Table with columns: Apr. 24 1984, + or -, Month ago. Lists sugar prices.

WHEAT

Table with columns: Apr. 24 1984, + or -, Month ago. Lists wheat prices.

BARLEY

Table with columns: Apr. 24 1984, + or -, Month ago. Lists barley prices.

GRAINS

Table with columns: Apr. 24 1984, + or -, Month ago. Lists grain prices.

COFFEE

Table with columns: Apr. 24 1984, + or -, Month ago. Lists coffee prices.

SOYABEAN OIL

Table with columns: Apr. 24 1984, + or -, Month ago. Lists soyabean oil prices.

SUGAR

Table with columns: Apr. 24 1984, + or -, Month ago. Lists sugar prices.

WHEAT

Table with columns: Apr. 24 1984, + or -, Month ago. Lists wheat prices.

BARLEY

Table with columns: Apr. 24 1984, + or -, Month ago. Lists barley prices.

GRAINS

Table with columns: Apr. 24 1984, + or -, Month ago. Lists grain prices.

COFFEE

Table with columns: Apr. 24 1984, + or -, Month ago. Lists coffee prices.

SOYABEAN OIL

Table with columns: Apr. 24 1984, + or -, Month ago. Lists soyabean oil prices.

SUGAR

Table with columns: Apr. 24 1984, + or -, Month ago. Lists sugar prices.

WHEAT

Table with columns: Apr. 24 1984, + or -, Month ago. Lists wheat prices.

BARLEY

Table with columns: Apr. 24 1984, + or -, Month ago. Lists barley prices.

GRAINS

Table with columns: Apr. 24 1984, + or -, Month ago. Lists grain prices.

COFFEE

Table with columns: Apr. 24 1984, + or -, Month ago. Lists coffee prices.

SOYABEAN OIL

Table with columns: Apr. 24 1984, + or -, Month ago. Lists soyabean oil prices.

SUGAR

Table with columns: Apr. 24 1984, + or -, Month ago. Lists sugar prices.

WHEAT

Table with columns: Apr. 24 1984, + or -, Month ago. Lists wheat prices.

BARLEY

Table with columns: Apr. 24 1984, + or -, Month ago. Lists barley prices.

GRAINS

Table with columns: Apr. 24 1984, + or -, Month ago. Lists grain prices.

COFFEE

Table with columns: Apr. 24 1984, + or -, Month ago. Lists coffee prices.

SOYABEAN OIL

Table with columns: Apr. 24 1984, + or -, Month ago. Lists soyabean oil prices.

SUGAR

Table with columns: Apr. 24 1984, + or -, Month ago. Lists sugar prices.

WHEAT

Table with columns: Apr. 24 1984, + or -, Month ago. Lists wheat prices.

BARLEY

Table with columns: Apr. 24 1984, + or -, Month ago. Lists barley prices.

GRAINS

Table with columns: Apr. 24 1984, + or -, Month ago. Lists grain prices.

COFFEE

Table with columns: Apr. 24 1984, + or -, Month ago. Lists coffee prices.

SOYABEAN OIL

Table with columns: Apr. 24 1984, + or -, Month ago. Lists soyabean oil prices.

SUGAR

Table with columns: Apr. 24 1984, + or -, Month ago. Lists sugar prices.

WHEAT

Table with columns: Apr. 24 1984, + or -, Month ago. Lists wheat prices.

BARLEY

Table with columns: Apr. 24 1984, + or -, Month ago. Lists barley prices.

GRAINS

Table with columns: Apr. 24 1984, + or -, Month ago. Lists grain prices.

COFFEE

Table with columns: Apr. 24 1984, + or -, Month ago. Lists coffee prices.

SOYABEAN OIL

Table with columns: Apr. 24 1984, + or -, Month ago. Lists soyabean oil prices.

SUGAR

Table with columns: Apr. 24 1984, + or -, Month ago. Lists sugar prices.

WHEAT

Table with columns: Apr. 24 1984, + or -, Month ago. Lists wheat prices.

BARLEY



CURRENCIES; MONEY and CAPITAL MARKETS

FOREIGN EXCHANGES

FINANCIAL FUTURES

Dollar continues to improve

The dollar continued to improve in currency markets yesterday, underpinned by fears of higher U.S. interest rates. News of a 0.8 per cent rise in U.S. durable goods orders in March was down from a revised figure of 2.9 per cent in February but was above market expectations of a 0.1 per cent decline. U.S. consumer prices rose 0.2 per cent in March, much in line with market expectations. The dollar's improvement was mainly at the expense of the D-mark with fears of disruption caused by a metal workers' strike tending to undermine the German unit. The dollar rose to DM 2.6785 from DM 2.6700 last Thursday and was quoted at DM 2.6800 in early New York trading. Against the Swiss franc it improved to Sfr 2.1685 from Sfr 2.1650 on Thursday. On the Bank of England figures, the dollar's trade weighted index rose from 127.8 to 128.6.

Table with columns: Country, Currency, % change, % change adjusted, Divergence limit. Includes entries for Belgium, Denmark, Germany, France, Netherlands, Ireland, Italy, UK, and US.

Table with columns: Day's spread, One month, Three months, % p.a. Includes entries for U.S., Canada, U.K., France, Germany, Italy, Japan, and others.

Table with columns: Country, Note Rates. Includes entries for Argentina, Australia, Brazil, Canada, Hong Kong, India, Indonesia, Japan, Korea, Malaysia, New Zealand, Saudi Arabia, Singapore, South Africa, and others.

Table with columns: Country, Exchange Cross Rates. Includes entries for Pound Sterling, U.S. Dollar, Deutsche Mark, Japanese Yen, French Franc, Swiss Franc, Dutch Guilder, Italian Lira, Canadian Dollar, and Belgian Franc.

Table with columns: Country, Euro-Currency Interest Rates. Includes entries for Short term, 3 months, 6 months, 9 months, 12 months, and 18 months.

MONEY MARKETS

UK rates little changed

Trading was rather subdued in the London money market yesterday. Short-term funds were in adequate supply on the first day after the long Easter break. Overnight interbank money opened at 8 1/2 per cent and failed to move above this level. Later in the day balances were taken down to 7 per cent. Three-month interbank money was quoted at 8 1/2 per cent the same as on Thursday with three-month outright bank bills added £50m and there was a fall in the note circulation of £210m. In addition banks brought forward balances £20m above target.

Table with columns: Term, Rate. Includes entries for Overnight, One month, Two months, Three months, Six months, and One year.

FT LONDON INTERBANK FIXING

Table with columns: Term, Rate. Includes entries for One month, Three months, Six months, One year, and Five years.

Quiet trading

Prices of contracts on the London International Financial Futures Exchange attempted a rally on the news around lunchtime that U.S. consumer prices had increased by only 0.2 per cent in March, compared with 0.4 per cent the previous month. But the market lacked the conviction to follow through, and prices retreated as the Chicago futures markets traded sluggishly. Trading in London was very quiet following the long Easter holiday, with the long term gilt contract only moving through the 1,000 lot level in the afternoon. Gilt futures for June delivery opened nervously, following the weak tone to the U.S. bond market on Monday, but then met some buying interest before profit taking wiped out part of the early gains. After starting at the day's low of 105.14 June gilt closed at 105.25, compared with 105.17 at Thursday's close.

Table with columns: Term, Rate. Includes entries for Three-month, Six-month, and One-year.

THE POUND SPOT AND FORWARD

Table with columns: Day's spread, One month, Three months, % p.a. Includes entries for U.S., Canada, U.K., France, Germany, Italy, Japan, and others.

THE DOLLAR SPOT AND FORWARD

Table with columns: Day's spread, One month, Three months, % p.a. Includes entries for U.K., Canada, U.S., France, Germany, Italy, Japan, and others.

CURRENCY MOVEMENTS

Table with columns: Bank of England Index, Morgan Guaranty Chase Index. Includes entries for Starting, U.S. dollar, Australian dollar, Canadian dollar, etc.

CURRENCY RATES

Table with columns: Bank Rate, Special Drawing Rights, European Currency Unit. Includes entries for Starting, U.S. dollar, Australian dollar, etc.

MONTHLY CURRENCY CHANGES

Table with columns: Country, % change, % change adjusted. Includes entries for U.S., Canada, U.K., France, Germany, Italy, Japan, and others.

MONTHLY CURRENCY CHANGES

Table with columns: Country, % change, % change adjusted. Includes entries for U.S., Canada, U.K., France, Germany, Italy, Japan, and others.

MONTHLY CURRENCY CHANGES

Table with columns: Country, % change, % change adjusted. Includes entries for U.S., Canada, U.K., France, Germany, Italy, Japan, and others.

MONTHLY CURRENCY CHANGES

Table with columns: Country, % change, % change adjusted. Includes entries for U.S., Canada, U.K., France, Germany, Italy, Japan, and others.

Changes are for ECU, therefore positive change means a weak currency. Adjustment calculated by Financial Times.

Quiet trading

Prices of contracts on the London International Financial Futures Exchange attempted a rally on the news around lunchtime that U.S. consumer prices had increased by only 0.2 per cent in March, compared with 0.4 per cent the previous month. But the market lacked the conviction to follow through, and prices retreated as the Chicago futures markets traded sluggishly. Trading in London was very quiet following the long Easter holiday, with the long term gilt contract only moving through the 1,000 lot level in the afternoon. Gilt futures for June delivery opened nervously, following the weak tone to the U.S. bond market on Monday, but then met some buying interest before profit taking wiped out part of the early gains. After starting at the day's low of 105.14 June gilt closed at 105.25, compared with 105.17 at Thursday's close.

Table with columns: Term, Rate. Includes entries for Three-month, Six-month, and One-year.

THE POUND SPOT AND FORWARD

Table with columns: Day's spread, One month, Three months, % p.a. Includes entries for U.S., Canada, U.K., France, Germany, Italy, Japan, and others.

THE DOLLAR SPOT AND FORWARD

Table with columns: Day's spread, One month, Three months, % p.a. Includes entries for U.K., Canada, U.S., France, Germany, Italy, Japan, and others.

CURRENCY MOVEMENTS

Table with columns: Bank of England Index, Morgan Guaranty Chase Index. Includes entries for Starting, U.S. dollar, Australian dollar, Canadian dollar, etc.

CURRENCY RATES

Table with columns: Bank Rate, Special Drawing Rights, European Currency Unit. Includes entries for Starting, U.S. dollar, Australian dollar, etc.

MONTHLY CURRENCY CHANGES

Table with columns: Country, % change, % change adjusted. Includes entries for U.S., Canada, U.K., France, Germany, Italy, Japan, and others.

MONTHLY CURRENCY CHANGES

Table with columns: Country, % change, % change adjusted. Includes entries for U.S., Canada, U.K., France, Germany, Italy, Japan, and others.

MONTHLY CURRENCY CHANGES

Table with columns: Country, % change, % change adjusted. Includes entries for U.S., Canada, U.K., France, Germany, Italy, Japan, and others.

MONTHLY CURRENCY CHANGES

Table with columns: Country, % change, % change adjusted. Includes entries for U.S., Canada, U.K., France, Germany, Italy, Japan, and others.

Changes are for ECU, therefore positive change means a weak currency. Adjustment calculated by Financial Times.

FINANCIAL TIMES CONFERENCES

THE FT WORLD MOTOR INDUSTRY CONFERENCE

Geneva, 23 & 24 May. This fifth World Motor Conference coincides with the SITEV exhibition in Geneva. Major papers on the motor, tyre and components industries will be given by Ing Vittorio Ghidella, Managing Director, Fiat Auto; Mr Tom Barrett, President, The Goodyear Tyre & Rubber Company and Mr Edward M. Irving, Senior Vice-President, Industrial Systems United Technologies Corporation. An economic analysis of the industry will be given by Dr Gerhard Liener, Member of the Executive Board, Daimler-Benz AG, and Mr Shigenobu Yamamoto, Executive Vice-Chairman, Toyota Motor Company will speak on Japan's international intentions in the motor business.

THE ELECTRONIC OFFICE

Threshold of a New Era. London, 5 & 6 June. This high-level meeting will focus on the pace of office automation and the current changes taking place in the professional office. Topics and speakers will include: "The Justification of Technology Investments for the Electronic Office" - Mr Paul Strassmann, Vice-President Systems Group, Rank Xerox Corporation.

"What are the Options for Users?" - Mr John Lenton, Division Vice-President, American Express Europe Limited.

"The Computer as the Key to Office Automation" - Mr James Bair, Advanced Functions Manager, Hewlett-Packard Business Development Group.

"The Electronic Mail" - Mr Robert Ryan, President, ITT Dialcom.

All inquiries should be addressed to: The Financial Times Limited Conference Organisation, Minster House, Arthur Street, London EC4R 9AX. Tel: 01-621 1355 (24-hour answering service). Tlx: 27347 FTCONF G. Cables: FINCONF LONDON

SAS Scandinavian Airlines System. NOK 200,000,000 1 1/8% Notes due 1991. Christiania Bank og Kreditkasse, Bergen Bank A/S, Den norske Creditbank, Citicorp Capital Markets Group, Deutsche Bank Aktiengesellschaft, Kreditbank International Group, Merrill Lynch Capital Markets, Societe Generale de Banque S.A., etc.



# FT INTERNATIONAL BOND SERVICE

The list shows the 200 latest international bond issues for which an adequate secondary market exists. The following are closing prices for April 24.

IS. COUNTRY	IS. COUNTRY	IS. COUNTRY	IS. COUNTRY	IS. COUNTRY	IS. COUNTRY
Alaska Housing 11 94	World Bank 11 94	World Bank 12 94	World Bank 13 94	World Bank 14 94	World Bank 15 94
Alaska Housing 12 94	World Bank 16 94	World Bank 17 94	World Bank 18 94	World Bank 19 94	World Bank 20 94
Alaska Housing 13 94	World Bank 21 94	World Bank 22 94	World Bank 23 94	World Bank 24 94	World Bank 25 94
Alaska Housing 14 94	World Bank 26 94	World Bank 27 94	World Bank 28 94	World Bank 29 94	World Bank 30 94
Alaska Housing 15 94	World Bank 31 94	World Bank 32 94	World Bank 33 94	World Bank 34 94	World Bank 35 94
Alaska Housing 16 94	World Bank 36 94	World Bank 37 94	World Bank 38 94	World Bank 39 94	World Bank 40 94
Alaska Housing 17 94	World Bank 41 94	World Bank 42 94	World Bank 43 94	World Bank 44 94	World Bank 45 94
Alaska Housing 18 94	World Bank 46 94	World Bank 47 94	World Bank 48 94	World Bank 49 94	World Bank 50 94
Alaska Housing 19 94	World Bank 51 94	World Bank 52 94	World Bank 53 94	World Bank 54 94	World Bank 55 94
Alaska Housing 20 94	World Bank 56 94	World Bank 57 94	World Bank 58 94	World Bank 59 94	World Bank 60 94
Alaska Housing 21 94	World Bank 61 94	World Bank 62 94	World Bank 63 94	World Bank 64 94	World Bank 65 94
Alaska Housing 22 94	World Bank 66 94	World Bank 67 94	World Bank 68 94	World Bank 69 94	World Bank 70 94
Alaska Housing 23 94	World Bank 71 94	World Bank 72 94	World Bank 73 94	World Bank 74 94	World Bank 75 94
Alaska Housing 24 94	World Bank 76 94	World Bank 77 94	World Bank 78 94	World Bank 79 94	World Bank 80 94
Alaska Housing 25 94	World Bank 81 94	World Bank 82 94	World Bank 83 94	World Bank 84 94	World Bank 85 94
Alaska Housing 26 94	World Bank 86 94	World Bank 87 94	World Bank 88 94	World Bank 89 94	World Bank 90 94
Alaska Housing 27 94	World Bank 91 94	World Bank 92 94	World Bank 93 94	World Bank 94 94	World Bank 95 94
Alaska Housing 28 94	World Bank 96 94	World Bank 97 94	World Bank 98 94	World Bank 99 94	World Bank 100 94
Alaska Housing 29 94	World Bank 101 94	World Bank 102 94	World Bank 103 94	World Bank 104 94	World Bank 105 94
Alaska Housing 30 94	World Bank 106 94	World Bank 107 94	World Bank 108 94	World Bank 109 94	World Bank 110 94
Alaska Housing 31 94	World Bank 111 94	World Bank 112 94	World Bank 113 94	World Bank 114 94	World Bank 115 94
Alaska Housing 32 94	World Bank 116 94	World Bank 117 94	World Bank 118 94	World Bank 119 94	World Bank 120 94
Alaska Housing 33 94	World Bank 121 94	World Bank 122 94	World Bank 123 94	World Bank 124 94	World Bank 125 94
Alaska Housing 34 94	World Bank 126 94	World Bank 127 94	World Bank 128 94	World Bank 129 94	World Bank 130 94
Alaska Housing 35 94	World Bank 131 94	World Bank 132 94	World Bank 133 94	World Bank 134 94	World Bank 135 94
Alaska Housing 36 94	World Bank 136 94	World Bank 137 94	World Bank 138 94	World Bank 139 94	World Bank 140 94
Alaska Housing 37 94	World Bank 141 94	World Bank 142 94	World Bank 143 94	World Bank 144 94	World Bank 145 94
Alaska Housing 38 94	World Bank 146 94	World Bank 147 94	World Bank 148 94	World Bank 149 94	World Bank 150 94
Alaska Housing 39 94	World Bank 151 94	World Bank 152 94	World Bank 153 94	World Bank 154 94	World Bank 155 94
Alaska Housing 40 94	World Bank 156 94	World Bank 157 94	World Bank 158 94	World Bank 159 94	World Bank 160 94
Alaska Housing 41 94	World Bank 161 94	World Bank 162 94	World Bank 163 94	World Bank 164 94	World Bank 165 94
Alaska Housing 42 94	World Bank 166 94	World Bank 167 94	World Bank 168 94	World Bank 169 94	World Bank 170 94
Alaska Housing 43 94	World Bank 171 94	World Bank 172 94	World Bank 173 94	World Bank 174 94	World Bank 175 94
Alaska Housing 44 94	World Bank 176 94	World Bank 177 94	World Bank 178 94	World Bank 179 94	World Bank 180 94
Alaska Housing 45 94	World Bank 181 94	World Bank 182 94	World Bank 183 94	World Bank 184 94	World Bank 185 94
Alaska Housing 46 94	World Bank 186 94	World Bank 187 94	World Bank 188 94	World Bank 189 94	World Bank 190 94
Alaska Housing 47 94	World Bank 191 94	World Bank 192 94	World Bank 193 94	World Bank 194 94	World Bank 195 94
Alaska Housing 48 94	World Bank 196 94	World Bank 197 94	World Bank 198 94	World Bank 199 94	World Bank 200 94

IS. COUNTRY	IS. COUNTRY	IS. COUNTRY	IS. COUNTRY	IS. COUNTRY	IS. COUNTRY
Alaska Housing 11 94	World Bank 11 94	World Bank 12 94	World Bank 13 94	World Bank 14 94	World Bank 15 94
Alaska Housing 12 94	World Bank 16 94	World Bank 17 94	World Bank 18 94	World Bank 19 94	World Bank 20 94
Alaska Housing 13 94	World Bank 21 94	World Bank 22 94	World Bank 23 94	World Bank 24 94	World Bank 25 94
Alaska Housing 14 94	World Bank 26 94	World Bank 27 94	World Bank 28 94	World Bank 29 94	World Bank 30 94
Alaska Housing 15 94	World Bank 31 94	World Bank 32 94	World Bank 33 94	World Bank 34 94	World Bank 35 94
Alaska Housing 16 94	World Bank 36 94	World Bank 37 94	World Bank 38 94	World Bank 39 94	World Bank 40 94
Alaska Housing 17 94	World Bank 41 94	World Bank 42 94	World Bank 43 94	World Bank 44 94	World Bank 45 94
Alaska Housing 18 94	World Bank 46 94	World Bank 47 94	World Bank 48 94	World Bank 49 94	World Bank 50 94
Alaska Housing 19 94	World Bank 51 94	World Bank 52 94	World Bank 53 94	World Bank 54 94	World Bank 55 94
Alaska Housing 20 94	World Bank 56 94	World Bank 57 94	World Bank 58 94	World Bank 59 94	World Bank 60 94
Alaska Housing 21 94	World Bank 61 94	World Bank 62 94	World Bank 63 94	World Bank 64 94	World Bank 65 94
Alaska Housing 22 94	World Bank 66 94	World Bank 67 94	World Bank 68 94	World Bank 69 94	World Bank 70 94
Alaska Housing 23 94	World Bank 71 94	World Bank 72 94	World Bank 73 94	World Bank 74 94	World Bank 75 94
Alaska Housing 24 94	World Bank 76 94	World Bank 77 94	World Bank 78 94	World Bank 79 94	World Bank 80 94
Alaska Housing 25 94	World Bank 81 94	World Bank 82 94	World Bank 83 94	World Bank 84 94	World Bank 85 94
Alaska Housing 26 94	World Bank 86 94	World Bank 87 94	World Bank 88 94	World Bank 89 94	World Bank 90 94
Alaska Housing 27 94	World Bank 91 94	World Bank 92 94	World Bank 93 94	World Bank 94 94	World Bank 95 94
Alaska Housing 28 94	World Bank 96 94	World Bank 97 94	World Bank 98 94	World Bank 99 94	World Bank 100 94
Alaska Housing 29 94	World Bank 101 94	World Bank 102 94	World Bank 103 94	World Bank 104 94	World Bank 105 94
Alaska Housing 30 94	World Bank 106 94	World Bank 107 94	World Bank 108 94	World Bank 109 94	World Bank 110 94
Alaska Housing 31 94	World Bank 111 94	World Bank 112 94	World Bank 113 94	World Bank 114 94	World Bank 115 94
Alaska Housing 32 94	World Bank 116 94	World Bank 117 94	World Bank 118 94	World Bank 119 94	World Bank 120 94
Alaska Housing 33 94	World Bank 121 94	World Bank 122 94	World Bank 123 94	World Bank 124 94	World Bank 125 94
Alaska Housing 34 94	World Bank 126 94	World Bank 127 94	World Bank 128 94	World Bank 129 94	World Bank 130 94
Alaska Housing 35 94	World Bank 131 94	World Bank 132 94	World Bank 133 94	World Bank 134 94	World Bank 135 94
Alaska Housing 36 94	World Bank 136 94	World Bank 137 94	World Bank 138 94	World Bank 139 94	World Bank 140 94
Alaska Housing 37 94	World Bank 141 94	World Bank 142 94	World Bank 143 94	World Bank 144 94	World Bank 145 94
Alaska Housing 38 94	World Bank 146 94	World Bank 147 94	World Bank 148 94	World Bank 149 94	World Bank 150 94
Alaska Housing 39 94	World Bank 151 94	World Bank 152 94	World Bank 153 94	World Bank 154 94	World Bank 155 94
Alaska Housing 40 94	World Bank 156 94	World Bank 157 94	World Bank 158 94	World Bank 159 94	World Bank 160 94
Alaska Housing 41 94	World Bank 161 94	World Bank 162 94	World Bank 163 94	World Bank 164 94	World Bank 165 94
Alaska Housing 42 94	World Bank 166 94	World Bank 167 94	World Bank 168 94	World Bank 169 94	World Bank 170 94
Alaska Housing 43 94	World Bank 171 94	World Bank 172 94	World Bank 173 94	World Bank 174 94	World Bank 175 94
Alaska Housing 44 94	World Bank 176 94	World Bank 177 94	World Bank 178 94	World Bank 179 94	World Bank 180 94
Alaska Housing 45 94	World Bank 181 94	World Bank 182 94	World Bank 183 94	World Bank 184 94	World Bank 185 94
Alaska Housing 46 94	World Bank 186 94	World Bank 187 94	World Bank 188 94	World Bank 189 94	World Bank 190 94
Alaska Housing 47 94	World Bank 191 94	World Bank 192 94	World Bank 193 94	World Bank 194 94	World Bank 195 94
Alaska Housing 48 94	World Bank 196 94	World Bank 197 94	World Bank 198 94	World Bank 199 94	World Bank 200 94

IS. COUNTRY	IS. COUNTRY	IS. COUNTRY	IS. COUNTRY	IS. COUNTRY	IS. COUNTRY
Alaska Housing 11 94	World Bank 11 94	World Bank 12 94	World Bank 13 94	World Bank 14 94	World Bank 15 94
Alaska Housing 12 94	World Bank 16 94	World Bank 17 94	World Bank 18 94	World Bank 19 94	World Bank 20 94
Alaska Housing 13 94	World Bank 21 94	World Bank 22 94	World Bank 23 94	World Bank 24 94	World Bank 25 94
Alaska Housing 14 94	World Bank 26 94	World Bank 27 94	World Bank 28 94	World Bank 29 94	World Bank 30 94
Alaska Housing 15 94	World Bank 31 94	World Bank 32 94	World Bank 33 94	World Bank 34 94	World Bank 35 94
Alaska Housing 16 94	World Bank 36 94	World Bank 37 94	World Bank 38 94	World Bank 39 94	World Bank 40 94
Alaska Housing 17 94	World Bank 41 94	World Bank 42 94	World Bank 43 94	World Bank 44 94	World Bank 45 94
Alaska Housing 18 94	World Bank 46 94	World Bank 47 94	World Bank 48 94	World Bank 49 94	World Bank 50 94
Alaska Housing 19 94	World Bank 51 94	World Bank 52 94	World Bank 53 94	World Bank 54 94	World Bank 55 94
Alaska Housing 20 94	World Bank 56 94	World Bank 57 94	World Bank 58 94	World Bank 59 94	World Bank 60 94
Alaska Housing 21 94	World Bank 61 94	World Bank 62 94	World Bank 63 94	World Bank 64 94	World Bank 65 94
Alaska Housing 22 94	World Bank 66 94	World Bank 67 94	World Bank 68 94	World Bank 69 94	World Bank 70 94
Alaska Housing 23 94	World Bank 71 94	World Bank 72 94	World Bank 73 94	World Bank 74 94	World Bank 75 94
Alaska Housing 24 94	World Bank 76 94	World Bank 77 94	World Bank 78 94	World Bank 79 94	World Bank 80 94
Alaska Housing 25 94	World Bank 81 94	World Bank 82 94	World Bank 83 94	World Bank 84 94	World Bank 85 94
Alaska Housing 26 94	World Bank 86 94	World Bank 87 94	World Bank 88 94	World Bank 89 94	World Bank 90 94
Alaska Housing 27 94	World Bank 91 94	World Bank 92 94	World Bank 93 94	World Bank 94 94	World Bank 95 94
Alaska Housing 28 94	World Bank 96 94	World Bank 97 94	World Bank 98 94	World Bank 99 94	World Bank 100 94
Alaska Housing 29 94	World Bank 101 94	World Bank 102 94	World Bank 103 94	World Bank 104 94	World Bank 105 94
Alaska Housing 30 94	World Bank 106 94	World Bank 107 94	World Bank 108 94	World Bank 109 94	World Bank 110 94
Alaska Housing 31 94	World Bank 111 94	World Bank 112 94	World Bank 113 94	World Bank 114 94	World Bank 115 94
Alaska Housing 32 94	World Bank 116 94	World Bank 117 94	World Bank 118 94	World Bank 119 94	World Bank 120 94
Alaska Housing 33 94	World Bank 121 94	World Bank 122 94	World Bank 123 94	World Bank 124 94	World Bank 125 94
Alaska Housing 34 94	World Bank 126 94	World Bank 127 94	World Bank 128 94	World Bank 129 94	World Bank 130 94
Alaska Housing 35 94	World Bank 131 94	World Bank 132 94	World Bank 133 94	World Bank 134 94	World Bank 135 94
Alaska Housing 36 94	World Bank 136 94	World Bank 137 94	World Bank 138 94	World Bank 139 94	World Bank 140 94
Alaska Housing 37 94	World Bank 141 94	World Bank 142 94	World Bank 143 94	World Bank 144 94	World Bank 145 94
Alaska Housing 38 94	World Bank 146 94	World Bank 147 94	World Bank 148 94	World Bank 149 94	World Bank 150 94
Alaska Housing 39 94	World Bank 151 94	World Bank 152 94	World Bank 153 94	World Bank 154 94	World Bank 155 94
Alaska Housing 40 94	World Bank 156 94	World Bank 157 94	World Bank 158 94	World Bank 159 94	World Bank 160 94
Alaska Housing 41 94	World Bank 161 94	World Bank 162 94	World Bank 163 94	World Bank 164 94	World Bank 165 94
Alaska Housing 42 94	World Bank 166 94	World Bank 167 94	World Bank 168 94	World Bank 169 94	World Bank 170 94
Alaska Housing 43 94	World Bank 171 94	World Bank 172 94	World Bank 173 94	World Bank 174 94	World Bank 175 94
Alaska Housing 44 94	World Bank 176 94	World Bank 177 94	World Bank 178 94	World Bank 179 94	World Bank 180 94
Alaska Housing 45 94	World Bank 181 94	World Bank 182 94	World Bank 183 94	World Bank 184 94	World Bank 185 94
Alaska Housing 46 94	World Bank 186 94	World Bank 187 94	World Bank 188 94	World Bank 189 94	World Bank 190 94
Alaska Housing 47 94	World Bank 191 94	World Bank 192 94	World Bank 193 94	World Bank 194 94	World Bank 195 94
Alaska Housing 48 94	World Bank 196 94	World Bank 197 94	World Bank 198 94	World Bank 199 94	World Bank 200 94

# CAPITAL MARKETS

## Prices drift forces cancellation of Indonesian issue

BY MARY ANN SIEGHART IN LONDON

EUROBOND prices drifted downwards yesterday and market conditions in the D-Mark sector were bad enough to force the cancellation of a scheduled DM 150m issue from Indonesia.

Only one new dollar deal was launched, a \$50m five-year floating rate note by Premier Group Holdings, the South African industrial conglomerate. It pays 7/8 per cent over the six-month London Interbank Offered Rate at par and the coupon is reset quarterly, giving investors a play on the yield curve. Led by Citicorp, it has total fees of 1.4 per cent.

The dollar secondary market was very quiet yesterday, with trading confined to professionals. Prices fell by about 4 points.

Luxembourg is borrowing abroad for the first time through an Ecu 60m bond, the proceeds of which will be used to help restructure its ailing steel industry. The borrower is Societe Nationale de Credit et d'Investissement, but the 10-year bond is guaranteed by the Grand Duchy.

It has a 10% per cent coupon with a price to be fixed on May 3. Lead managers are Banque Generale du Luxembourg, Banque Internationale de Luxembourg and Caisse d'Epargne de l'Etat. Despite the oversupply in the Ecu bond market, the issue traded reasonably well at a 1% per cent discount.

The Asian Development Bank is raising Ft 200m through a 10-year public issue led by ABN Bank and Amro Bank. It has an 8% per cent coupon at par.

BHF Bond bond	Previous
April 24	99.722
93.883	Low
High	100.000
100.000	99.722

## Indian groups seek to raise \$278m

BOMBAY - More than 20 Indian companies plan to raise \$278m in the next three months to raise \$278m in the domestic capital markets, according to merchant bankers.

Several issues have been announced while others are being finalised as companies prepare to expand, modernise and diversify. Stockbrokers said most companies preferred to issue non-convertible debentures which have received an excellent response from investors.

Investors find non-convertible debentures attractive because they carry interest of 15 per cent as opposed to 13.5 per cent on convertibles and 10 per cent offered by banks on deposits.

The companies include Tata Iron and Steel, which is issuing non-convertible debentures for \$50m and Reliance Textile Industries, which is proposing to raise \$30m through convertible and non-convertible debentures. Bankers believe both issues will be oversubscribed and may together account for nearly \$100m.

Merchant bankers and stockbrokers hope that nearly \$100m will be raised through debentures, equity and fixed deposits in the fiscal year ending March 1985, against an estimated \$3.5bn in 1983-84.

Bankers



هكذا حدثنا

FINANCIAL TIMES SURVEY

Vehicle Design

A race is on throughout the motor industry worldwide to gain the most benefits from new technology. These innovations will, demand daunting levels of capital investment from most manufacturers, but the rewards for success will be high.

Burden of design grows heavier

"MY BEST advice, as we face our technological future through to the year 2000, is to fasten our seatbelts and prepare for the ride of our lives."

This view was offered by Mr Roger Smith, chairman of the world's largest vehicle producer, General Motors, at the International Association for Vehicle Design's "Towards 2000" technology conference in London last month.

"Businessmen and engineers alike must never forget we are in a worldwide technology race today," he warned — and one which some companies would not survive through paying insufficient regard to innovation.

Nowhere is that race more intensive than in the motor industry, where it is also allied to dauntingly high levels of capital investment both in the product and the means to produce it. In Europe alone, according to Prof. Krish Bhaskar, author of a recent 700-page study of the industry, manufacturers need to invest \$70bn between now and 1989 if they are to stay competitive with Japanese makers.

Mr Smith made two other highly pertinent points: that 90 per cent of the world's storehouse of knowledge has been generated in the past 30 years, and that it will double before the year 2000.

There is a two-fold effect as technology, and the knowledge storehouse increases:

The options available, in motor industry terms, for the design, performance characteristics and all other aspects of the vehicle itself proliferate enormously — as do the options

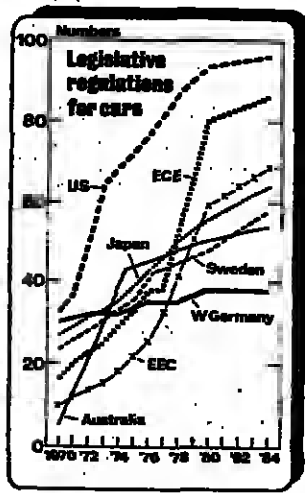
By JOHN GRIFFITHS

on how to produce it. And consumers, the target of ever-intensifying competition, become ever more selective and demanding.

The increasing burden that this throws on the design function, and designers, should hardly need stating. Design, and the efficient production of a design — itself a design function — represents the fountainhead to which, in the end, consumer acceptance, and hence sales and profits, can all be traced back.

As Mr Merrick Taylor, managing director of the internationally successful UK truck cab concern, Motor Panels, points out: "To talk about specific parts of an operation being cost-effective is all right, up to a point. But if you've got a bad product, no one is going to be cost-effective."

As past performances of some manufacturers have shown — in the UK, Fiat in Italy and American Motors Corporation in the U.S., among others —



but its new success to the design packages presented by its new models, spearheaded by the Cavalier. Equally, while Ford's Sierra is selling well on the Continent, the continuing debate over its styling in the UK, and its less-than-hoped-for sales figures, has further focused the design debate.

The demands made of designers are now such that there is virtually no scope for weak points in any aspect of vehicle design, whether in styling, accommodation, ride and road holding or drive trains: "fuel efficiency and aerodynamics alone will not sell a vehicle," pointed out Mr Smith — "but a car or truck which has both, which looks good and performs well is still eminently saleable."

The introduction of computer technology, however, has broadened the responsibility of the original design function well beyond the vehicle itself, reaching further and further into the production process.

Increasingly, the product database initially created by the vehicle designer is being used to create the tooling for production, with a consequent sharp rise in the risks and costs of a design-stage error. Component suppliers, too, are being drawn into the process. GKN, for example is preparing a computer link with a North American tractor maker so that cab designs can be displayed simultaneously on screens within the two companies and their involvement discussed.

Not only is the required sophistication of design increasing, so is the rate at which the function is required to be performed, under the pressure of, notably, competition from Japan.

The pressures stem, too, from flexible manufacturing systems, which have all but removed the

requirement to make major new capital investment for each new model, so becoming another contributor to the shorter model cycles now being experienced, down to around five years compared with eight-ten previously.

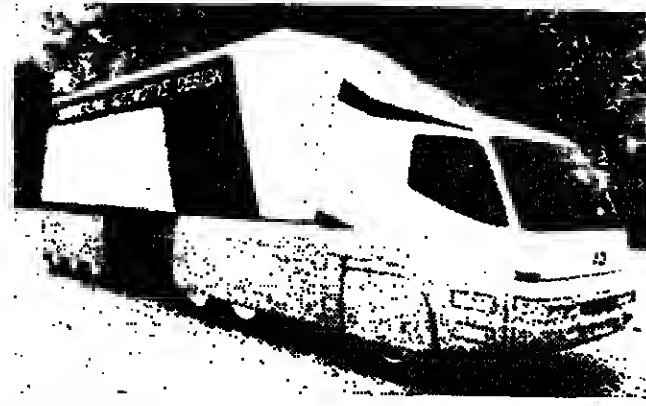
Yet more pressure is being put on the design function by the advent of new materials. All these pressures are taking place against a legislative climate in which standards on emissions, safety and other design aspects have been proliferating at, for manufacturers, daunting speed. The accompanying chart provides some indication. When Ford launched its Cargo truck three years ago it complained bitterly that European type approvals generated 3m bits of paper.

The design process has become immensely complicated. Ford in Europe, for example, has as its Product Development Group an integral operation employing 5,000 people at twin engineering centres in the UK and West Germany.

Ford is currently in the middle of a five-year plan to make the process easier with a \$50m investment in extra computer services. The same process has been going on at Austin Rover, which opened a new £5.2m design centre at Canley in February, where work on its joint executive car with Honda is proceeding under the direction of Mr Roy Axe, the British-born former design director of Chrysler.

He sets out Austin Rover's overall design goals quite explicitly: "Our philosophy is to achieve a balance between all functional requirements coupled with an appearance that

CONTINUED ON PAGE VI, COL. 3



The Windcheetah aerodynamic truck, with sleeper cab, by International Automotive Design of Worthing, Sussex. The model demonstrates two of the many style options possible. For this reason the right hand side (viewed from the front of cab) illustrates the most conventional solution, with open wheel arch and an aerodynamic rear

view mirror incorporating a turn indicator. This side also has a "stable door" entrance. The other side presents a more radical solution — the front wheel is covered by a wind deflector which moves with this wheel. Rear vision is through a TV camera set in the black triangle above the cab separation line.

ON OTHER PAGES

- Aerodynamics: prospects for fuel savings II
- Electronics: the sky's the limit II
- Engines and transmissions: Ford's vision II
- Manufacturing systems: new horizons III
- Computer-aided design: major benefits III
- Britain: innovators' frustration IV
- Italy: role of outside designers IV
- Japan: keeping styles up to date V
- U.S.: about-turn on styling V
- W. Germany: new design secrets V
- Medium rank producers: good prospects V
- Components: big investment in research V

Advent of new materials

SOMEWHERE AT the beginning of his dream-turned-nightmare, John De Lorean was heading at least partially in the right direction:

As originally conceived, his full-wing door sports car would have had an underbody of a foam-filled plastic composite to which all mechanical components would have been attached directly, as well as its stainless steel body panels. And in theory, the car could have lived on almost indefinitely, with the owner simply replacing mechanical bits as they wore out and fell off the virtually indestructible body. It was this theoretical longevity which prompted De Lorean, ironically, to christen it "the ethical car."

All other De Lorean problems aside, there were three fundamental flaws: the key, stress-bearing foam composite never materialised — a Lotus-style steel girder chassis was resorted to instead; the eventual underbody attached to this chassis provided little scope for the outer body panels to be changed in shape so that styling changes could be quickly and easily effected; and stainless steel body panels, while durable, were both expensive and would have needed high tooling costs to make styling changes.

Even so, with much detail disagreement about likely timing, costs and the most practicable plastic materials, the motor

industry is starting to move slowly — but at an accelerating pace — down a similar conceptual road.

Thus at some point in the 1990s, the average family car may well have:

A stress-bearing "skeleton" frame of aluminium, much lighter than steel and free of the hundreds of rust-creating galvanic cells automatically

made by steel spot-welding; Attached to the frame, moulded plastic panels — created with such low-cost tooling that a large number of model variants can be created around the frame economically, and updated in a fraction of the current four- or five-year model cycles; Some highly-stressed engine internals may be made of plastics, if in the end they can prove cost-effective against another major alternative material now under intense development — ceramics. Imperial Chemical Industries

is just one of several large plastics concerns evaluating new thermoplastic composites for applications such as piston skirts and rings, timing chain gears, tappets, bearing shells and turbocharger impellers.

It is a road, however, down which individual manufacturers are not so much driving as being pushed — by consumer and legislative pressures for lighter, more durable and cheaper to run cars, and by the knowledge that if one maker does not take the plunge, a rival will.

For European manufacturers in particular, with mature domestic markets and export prospects dwindling, it is a road full of risks.

At the end lies the possibility of reduced sales through enhanced longevity, offset by an indeterminate extent by the sales-creating stimulus of a greater variety of models changed more quickly.

Along the way lies the prospect of making obsolete much of the robotic and other automated steel-manipulating equipment on which the industry has spent billions of dollars during the current race into flexible manufacturing.

As Mr Harold Musgrove, Austin Rover's chairman, comments: CONTINUED ON PAGE VI, COL. 7

Lucas Equipment List — Austin Montego

- Square-styled Halogen Headlamps ✓
- High Contrast Front Indicator Lamps ✓
- Compact, High Performance Alternator ✓
- Starter of Proven Reliability ✓
- Steering Column Switchgear & Relays ✓
- Front Screenwiper Equipment ✓
- High Performance Battery ✓
- Advanced Digital Ignition System ✓
- Electronic Choke Control ✓
- Electronic Flasher Units ✓
- Facia Panel Equipment & Instruments ✓
- Hi-tech Instrumentation ✓
- Sensors, Transducers & Drive Units ✓
- Multipoint Fuel Injection Equipment (for high performance derivatives) ✓
- Front Disc Brakes ✓
- Rear Drum Brakes ✓
- Brake Actuation Equipment ✓
- Electrical Wiring System ✓
- Electrical Connectors ✓
- Ignition Cables & Fusing Systems ✓
- Lucas Electrical ✓
- Lucas Electrical Electronics & Systems ✓
- Lucas Gearing ✓
- Risks (a Lucas Company) ✓



Austin Rover and Lucas put the driver first.

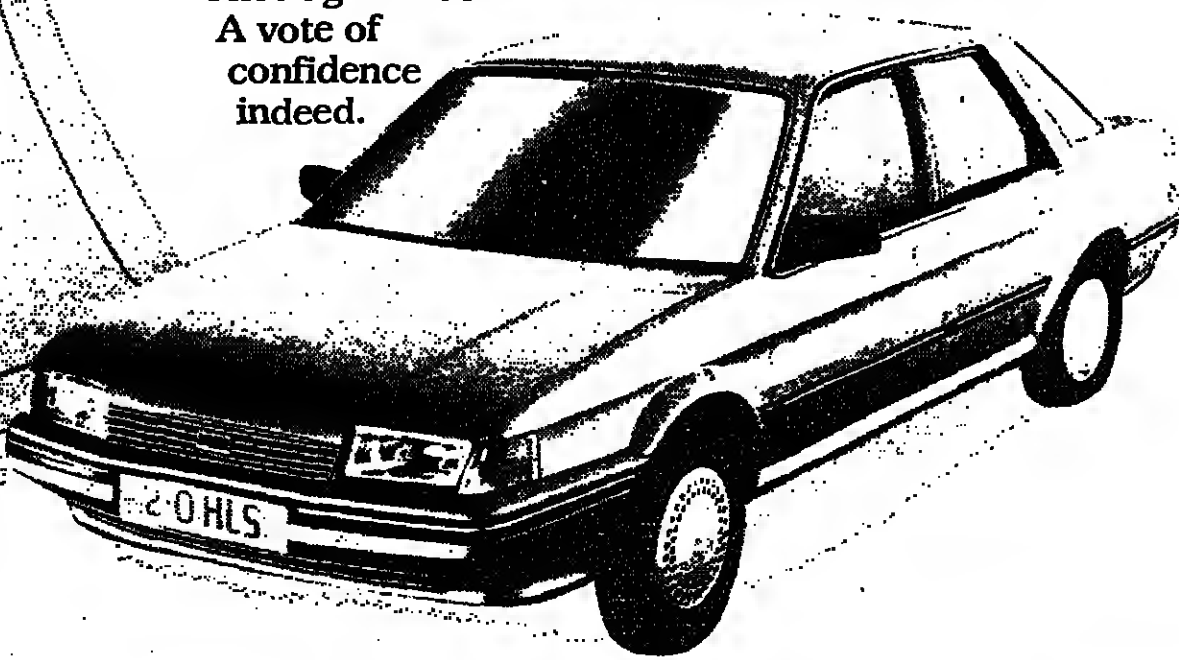
When Austin Rover were selecting electrical, electronic and braking equipment for the new Austin Montego, they knew just what they wanted — hi-tech systems and components that would add to the driver's comfort, pleasure and confidence.

In the event, all roads led to Lucas.

Small wonder; Lucas is in the forefront of the automotive electronics revolution and Lucas hi-tech products and systems are "taken for granted" features of most British motorcars — including the highly successful Metro and Maestro.

Once again Austin Rover have chosen Lucas.

A vote of confidence indeed.





VEHICLE DESIGN II

Route to significant fuel savings

VEHICLE AERODYNAMICS do have a significant role to play in manufacturers' quests for fuel economy. At motorway speeds in particular, a vehicle which has a relatively low resistance to the air through which it is passing can produce significant fuel savings.

This is because the resistance of air to a vehicle goes up exponentially with the vehicles speed. In other words, at 60 miles per hour aerodynamic drag is not double that applying at 30 mph, but quadruple. It is this factor which partly explains why, say, a 1.3 litre BL Maestro with about 70 brake horsepower can reach nearly 100 mph, but even a much sleeker Ferrari, Porsche or Jaguar needs nearly 300 brake horsepower to go about 60 mph faster.

In the past couple of years, some manufacturers have made much play of the "low drag" profiles of their cars as a marketing weapon: notably Ford with its Sierra, for which a drag coefficient, or Cd, of 0.34 was announced, and subsequently

the Audi 100, advertised as the world's most aerodynamically efficient saloon with a Cd of 0.30.

But although Cd has become almost as much-quoted a figure for some cars as 0.60 miles per hour acceleration times, the

Aerodynamics

JOHN GRIFFITHS

drag coefficient does not tell the whole story.

The Cd is a measurement of the factor by which a car's frontal area is reduced by means of streamlining. And since frontal area is itself a variable—theoretically the car's outline as seen at a point infinitely distant straight ahead of the car—no true measure of a car's resistance to drag can be made without taking both into account. In other words, those Cd figures can be misleading.

There is another factor, however, which makes manufacturers' preoccupation with aerodynamic drag understandable.

To arrive at the actual power needed to overcome it, the total drag forces must be multiplied by the air speed. In other words, the actual power needed to overcome drag is not even quadrupled at 60 mph compared with 30 mph but multiplied by eight.

But as awareness of the complexities have become more widespread, there are signs that manufacturers are taking a more sober approach to the marketing exploitation of aerodynamics.

Renault launched its 25 executive model earlier this year making little reference to the fact that with a declared Cd of 0.28, it could claim to be taken over the "most slippery" title from Audi.

BMW, at about the same time, was moved to declare that while it acknowledged the benefits of low drag shapes as a contributor to fuel economy, a low Cd should not be viewed as an end



The Ogle Design Project 2000 car is "designed from the inside with people as the top priority" and shaped for efficiency on the road 16 years ahead. Features of the 4-seat family car concept include good visibility, low drag with aerodynamic stability and a practical rear compartment with moulded gutting doors.

in itself—that other design aspects such as interior and running gear room, boot space and handling should not be compromised in pursuit of it. A perhaps cynical view prevailed in some quarters about BMW's stance at the time that it was a retrospective justification for the styling conservatism of its current 5 and 6 series cars.

However, considerable Press debate recently about the Sierra, in which its side-window stability has been questioned as a possible penalty for its low drag coefficient, has also helped to focus attention on the debate about the precise role aerodynamics should play in overall vehicle design.

If all other considerations except ideal shape were excluded, wind tunnel research by a number of manufacturers such as Volkswagen, Audi and Daimler Benz with their "Auto-2000" research cars, as well as Ford with its Probe IV and BL with its ECV 3 research projects, have shown that shapes with less than half the drag coefficient of the Audi 100 are feasible.

However, when due account is taken of practicalities—adequate accommodation, airflow-interrupting but vital items such as wing mirrors, and the inevitable gaps in wheel arches and so on—an industry consensus view is that average cars of the late 1980s will have Cds

of 0.30 to 0.35.

Three main areas for development

IN 1981, General Motors put an on-board computer into every one of its models. Each was programmed with a maximum of about 1,500 command instructions.

By 1986, some of GM's cars will have seven computers on board, providing 38,000 command instructions, covering virtually every aspect of the vehicle's performance.

"Even so, we've barely begun to discover how many ways advanced electronics can be used in cars and trucks—the sky's the limit," Mr Roger Smith, GM's chairman, told a "Towards 2000" technology conference organised by the Open University in London last month.

As with many other industries, the challenge now for the motor manufacturers is to make intelligent, reliable applications of micro-electronics which are already more than sophisticated, small and light enough to cope with any demands that a vehicle might make of them.

In the hostile environment under the bonnet, the reliability factor looms large. But such is the progress already made that predictions that the engine bay would be a micro-electronics "no-go" area have long since been proved wrong.

There are three main areas into which micro-electronics divide:

- Driver information systems, covering such things as dashboard display and vehicle condition monitoring; for example, the "service mileage indicator" system launched on BMWs nearly two years ago;
- Engine management and drive train control, concerned principally—at least for the moment—with electronic ignition, fuel injection and carburettor management, and gear selection within automatic gear-

boxes for maximum efficiency; ● Systems which have yet to find their way into volume car applications, such as anti-skid braking mechanisms, modulated suspension systems—giving a variation in suspension settings between hard and soft—and programmable command functions to items such as lights and windscreen wipers.

The last item is the subject of much development and promises significant weight savings within the car. It involves essentially a micro-electronic "ring main" con-

Electronics

JOHN GRIFFITHS

sisting of master computer with subsidiary control centres scattered about the car, and connected to the main computer via a multiplex "bus" line—a two-way information line.

Using it, the driver can both send instructions to turn signals, lights, wipers, etc—but it can also be used, as BMW intends to do by 1986, to feed information to diagnostic equipment.

Ford is among several manufacturers working on prototype systems.

By its estimates, the average length of a conventional wiring harness—19.40 metres—could be cut to three metres, and the number of wires in and out of the fusebox from 60 to two. There would be a weight saving of at least 60 per cent.

No less important, the dramatically simplified harness would be suitable for installation by robots—thus cutting out the risk of wrong installation, and removing electrical

faults from their current position as one of the biggest contributors to warranty costs for manufacturers.

Typical of the increasing sophistication of engine micro-processors, control systems is Ford's EEC-IV unit, now in volume production in the US. It can process 16 commands a second and is already in some production cars. In Europe, it is in use on a fleet of 50 prototype Granada "536" models, on which it controls the engine's ability to alternate rapidly between three and six cylinders depending on engine load. It reads all critical engine parameters, processes the information and changes the engine function in under 2.5 milliseconds. It requires only a microprocessor and a memory, both on chips less than 1 in square.

It has enough capacity to control all Ford powertrain and fuel delivery systems throughout the 1980s.

In current usage it has much spare capacity—which will be used eventually to more effectively control peripherals such as air conditioning.

It will also have the learning capacity to keep the engine operating near optimum efficiency throughout its life, adapting for component variability, ageing or even failure.

It is the Japanese, however, who—under the impetus of a very strict legislative environment—have moved into the forefront of motor industry electronics. Toyota, in particular, has developed a "TCCS" (Toyota computer controlled system) in which engine and transmission electronics are linked to each other for maximum powertrain efficiency, as well as having built-in fault self-diagnosis, fail-safe and self repair functions.

Ford's vision for the family car of the 1990s

FORD'S PREDICTION of the family car of the 1990s is that it is likely to be powered by a small three-cylinder turbo-charged direct injection diesel with electronic engine management, driving through a continuously variable automatic transmission.

Such a transmission, or CVT, is already becoming reality in small Ford, Fiat and Suzuki cars with it are being launched and General Motors will produce a similar unit for larger cars from its Strasbourg plant within the next two years.

Engines are much more problematical. Dr Ulrich Sieffert, executive director of research at Volkswagen, for example, is rather more cynical about the arrival of direct injection diesels, suggesting that a more practical alternative would be supercharging as the next step on from the turbocharging of small, indirect injection diesels.

Such a system, he suggests, would provide a better answer than the lower power and higher cost which he says are the drawbacks to the 15 per cent better fuel consumption offered by direct, rather than indirect, injection diesel engine. That view, however, has not dissuaded Austin Rover and Perkins from jointly launching such an engine in the Maestro and Montego next spring.

There are many other permutations of possible engines, including gas turbines for trucks—a real possibility, according to General Motors chairman Mr Roger Smith; petrol engines of light weight and using

Engines and transmissions

JOHN GRIFFITHS

ceramic or plastic components, and even—Dr Sieffert again—"hybrid" units combining diesel and electric engines under the same bonnet which switch automatically for performance or economy.

What Dr Steffert is convinced of is that there will be little in the way of electric passenger cars around the year 2000—at best, he predicts, they will account for 0.5 per cent of the car population. The situation with commercial vehicles is different, however. The UK motor industry has been first into commercial production of electric panel vans—from Bedford, Freight Rover, and Karrier Motors—with Bedford marketing director Des Savage predicting a 10,000 a year market in the UK alone well before the century is out.

But as recent design changes and experiments have shown from several manufacturers, there is lots of scope yet to develop the conventional petrol engine.

A notable innovation this year was the launch by Alfa Romeo of a variable valve overlap modification to its twin overhead camshaft engine range. Achieved by rotating

one camshaft by means of a helical gear and spline, it has the effect of varying the engine timing, to provide improved performance across the operating range, as well as a fuel consumption improvement of up to 13 per cent.

VW is currently taking a different approach with similar objectives. It is trying out an engine with variable compression ratio. In this, the combustion chamber is split into main and ancillary areas, with the volume of the main combustion chamber made variable according to load conditions.

The objective, again, is to get the best performance for given conditions.

VW is also being very active in the field of engines using methanol, and for nearly two years has been running a trial fleet of several hundred cars. So far, it claims to have found the cars to operate viably.

The reason for VW's interest is its declared belief that by the year 2000, under oil cost and emissions control pressures, only about half of cars will still be using petrol. By then it expects 25 per cent of cars to be running on methanol—produced from coal—with diesel cars accounting for 15 per cent, LPG (liquefied petroleum gas) cars 6 per cent, and the balance, about 3.5 per cent (excluding electric) made up by cars using ethanol produced from plants.

Sir Clive Sinclair is likely to disagree. The UK electronics innovator plans to launch a wholly electric-powered commuter car next year.

**"Between you and me, the new Montego is in for a pretty smooth ride!"**

As you might expect of a car fitted with Armstrong shock absorbers, the new Montego from Austin Rover is in for just that. In fact, we like to think it's in for the smoothest ride on the market, and needless to say, we're very pleased about it.

**ARMSTRONG SHOCK ABSORBERS**

Armstrong Patents Co. Limited, Gibson Lane, Melton, North Ferraby, North Humberside, HU14 3HY, Telephone 0482 633311, Telex 52164

**GKN MAKES TECHNOLOGY WORK IN THE NEW MONTEGO**

GKN Automotive companies produce the superb new Montego's forged connecting rods, swivel hubs, clutch hub, and stub shafts. The front wheel drive shafts, camshaft pulleys, and engine bearings.

GKN Guest Keen and Nettlefolds plc, P.O. Box 55, Cranford Street, Smethwick, WARLEY, West Midlands B66 2RZ, Telephone: 021-558 3131, Telex: 336321.

**Montego in International cover-up**

Once again International Paint has been chosen by Austin Rover to supply a comprehensive paint system for the original factory finish on their latest model, the Montego. The contract was won in the face of fierce competition, and reflects the growing relationship between International Paint and the Austin Rover Group.

The Group's decision was guided by the outstanding success of the total painting system designed by International Paint for the Maestro. It was this painting system that helped make possible Austin Rover's six-year corrosion warranty on all Austin and MG Maestros.

The paint system developed by International Paint for the Montego similarly employs the very latest in paint technology. It is applied in three stages:

1. IP Cathodic Electropaint Primer (A total immersion process).
2. IP Minsand Polyester Surfacer, providing the best possible substrate for the final colour.
3. A range of IP top coats of either base-clear metallics from the IP Polyester Acrylic Base Clear System, or a solid colour of IP Alkyds.

After the vehicle has left the factory, IP products are yet again chosen by Austin Rover. The recommended finish material for all Austin Rover vehicles, Acryline can achieve a finish closer to the original factory finish than any other product.

**International Paint**

International Paint plc, Ladywood Group, Rotton Park Street, Birmingham B16 0AD, Telephone: 021-455 9866 Telex: 339266

**OVER 100 LOCATIONS TO HIRE MONTEGO**

**British Car Rental**

FOR YOUR NEAREST DEPOT CALL CENTRAL RESERVATIONS (0203)77223

*Spit is it!*



VEHICLE DESIGN III

# How computers open up ever-widening horizons

A MAJOR motor manufacturer already has the ability to design a car, display it in colour, view it from all angles and crash it—all on a computer.

Increasingly, the computer's role is being taken several stages further. Austin Rover, for example, uses the same master database created in arriving at a car's specification for the creation of the tooling which will make it on the assembly line. Not too far into the future, the concept-to-tooling process will be completely computerised.

Gone are the days when the final design of a car was arrived at as the result of a grudging compromise between stylists and engineers. Design has become an integrated, multi-disciplinary function.

Gordon Sked, director of exterior design at the new £5.2m design centre opened by Austin Rover at the old Triumph plant in Canley in February, describes changes within Austin Rover which are being repeated, at varying speeds, within all manufacturers.

Whereas with earlier designs, such as Mini and Maxi, the main thrust in the production of the package was within product engineering, now we in this (design) office are totally involved with engineering in ensuring that the package complements the creative scope of the designer without eroding the goals.

"We have become rapidly aware of the need to consider a more rational approach to replacement models with particular regard to investment, rationalisation and flexibility of our existing and planned production facilities.

"This creates a significant challenge to the designers in the creation of a complete model range with sufficient differentiation from each other, but with the maximum degree of rationalisation in their manufacture."

In all its forms, Mr Sked points out, new technology has obvious benefits in the manufacturing process. "But it is also playing an escalating role in ensuring that the designer's work is translated through all the engineering and manufacturing processes to a showroom product which is true to the designer's intent."

With it, however, goes a much increased responsibility for the

designer, as the originator of the database. He has to be sure that information released for production is accurate—if not, subsequent changes are liable to be expensive in cost, quality and time as they stretch further into the production processes.

The risks, however, are greatly outweighed by the advantages—not just in more efficient use of design time but in the co-ordination, via the database, of all the various operations providing input to the finished car.

This design process is also spreading outside of the manu-

## Manufacturing systems

JOHN GRIFFITHS

facturer's own facilities. Slowly, but surely, component suppliers are being brought into the equation, using compatible computer equipment, they too are increasingly being plugged into the same database so that sub-contracted component development and tooling forms part of the overall model design process.

With a multinational, producing cars on a world scale, the communications process becomes even more complex.

In May, Ford is to start an eight-month trial of satellite TV communications for its engineers. The plan, outlined by Ford of Europe's new president, Mr James Capolongo, is to allow groups of engineers in the UK and West Germany to talk to each other and examine parts by TV, using new technology which reduces video conference costs to about a tenth of traditional levels.

That is just the latest move in a very broad programme, however, for Ford is roughly at the mid-point of an ambitious, five-year plan to increase five-fold computer services to its designers and engineers at a total cost of over \$50m. Some 400 terminals are already in use, linked within Europe—where Ford's Product Development Group is integrated at twin engineering centres at Dunton in the UK and Cologne in West Germany—or with the mainframe computer in Detroit.

By the same token designers and engineers at Bedford Trucks in the UK, now part of

General Motors' World Truck and Bus operation, are linked with the headquarters at Pontiac, Michigan, as development goes on of the new "world" commercial vehicles planned to be built by GM from the late 1980s.

The need for the co-ordination was underlined recently by Mr Roger Smith, GM's chairman, because of rapidly intensifying competition, the day when innovation could be phased in, with new technology being thoroughly developed on one model before being applied across the board, are over, he said. "If manufacturers are to succeed—indeed, to survive—the cars and trucks of the future must be state of the art and they must be built in the factory of the future."

In this context, design is not simply a matter of the vehicle. In the U.S., GM is gradually putting together "Buick City." The idea stems from the "just in time" inventory systems of the Japanese motor industry, involving satellite component factories within a short distance of the assembly plant. It forms part of what Mr Smith describes as the "revolution going on in manufacturing technology: materials handling, the way factories are laid out and put together."

And within the assembly plant new systems for assembling cars, involving a major redesign of the car itself, are being devised.

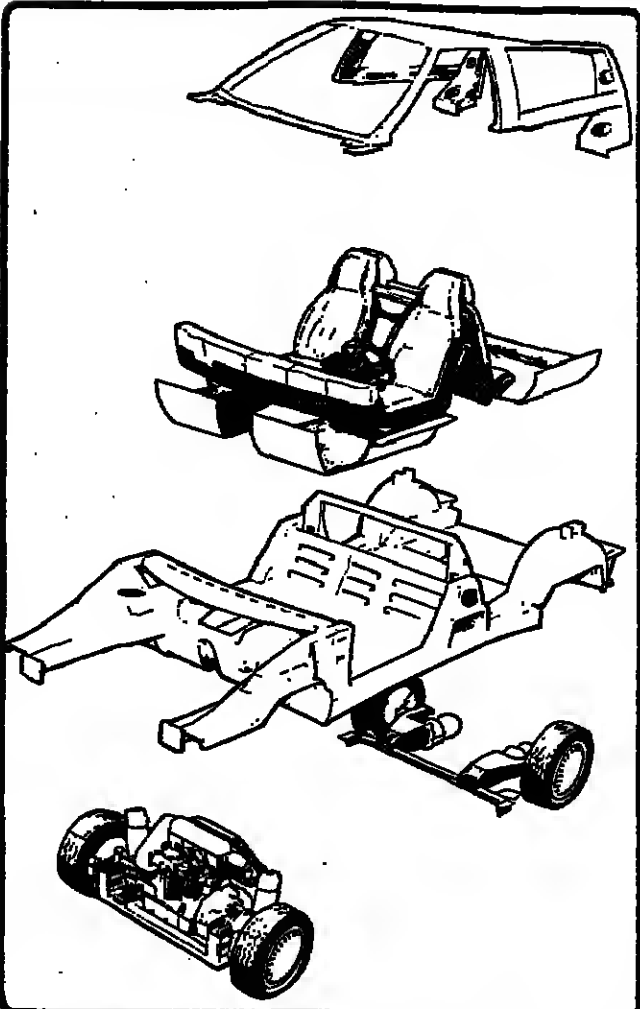
GM is at the centre of this activity with Project Saturn, a Cavalier-sized car it plans to have on the road by the late 1980s.

The car will have the expected improvements in terms of lighter weight, aerodynamics and so on—but more crucially, it is designed to be assembled in modules, including the interior trim—thus cutting out the last labour-intensive area, final assembly, which is also the most prone to human error.

That in turn means redesign of the assembly line. It will become much shorter, says Mr Smith, and it will be flanked by many more "feeder" lines putting in sub-assemblies.

All this is expected to go hand in hand with increasing robotisation and other automated equipment.

Volvo is working very much on the same lines, as indeed are most other manufacturers. One tangible result is Volvo's



The pre-assembly of internal components, as Volvo points out, could even be carried out by suppliers

Light Component Car (LCC 2000) unveiled at the end of last year. Much of the work was carried out by outsiders, notably International Automotive Design at Worthing in the UK.

The terms of reference were to establish the demands that would be placed on a car by the year 2000. The group was required not just to come up with a car design, but one that could be volume produced in the most efficient way. IAD and its chairman, John Shute, were responsible for the styling concept, feasibility engineering, a large amount of the body engineering, the detail design to complete the interior and a considerable number of other items.

One major result can be seen in the accompanying drawings: Virtually the entire cabin section, with its difficult-to-handle soft trim, mates to the rest of the car as a module. This pre-assembly of internal

components, Volvo points out, could even be carried out by suppliers, such as the manufacturer of the injection moulded components.

Again, this is just one aspect of the design element leading to major production line changes. And it can have profound impacts in financial terms, too.

A good example is provided by Fiat's Uno. Fiat has spent some \$4bn in the past four years on motor industry investments, about a third on developing new cars, the rest on automation and robotics. By matching the car design to the enhanced manufacturing capabilities, the Uno emerged larger and much more sophisticated than its 127 predecessor, but with about 100 fewer body parts, and not much more than half the spot welds—only 30 per cent of them applied by hand.

As a consequence, it was far cheaper to build, and it is no accident that Fiat is back making profits.

# Electronic drawing board brings major benefits

GREAT strides have been made since the vehicle industry started to consider computer-aided design (CAD) in the mid-1960s. Investment has been considerable—Ford alone has spent \$100m.

There are three significant benefits: new designs can be put on the market more quickly, design quality can be improved, and draughting productivity can be increased—although manufacturers' claims have been prone to exaggeration.

How does it work? In its simplest form, CAD is just an electronic drawing board replacement with memory. Instead of using paper and pencil, the designer uses a keyboard or "light pen" to "draw" the same lines on the face of a TV tube.

The picture is built up (as in television), from a single spot scanning many horizontal lines one under the other at various intensities and colours. The complete picture results only from the human eye's persistence of vision.

In CAD, a controlling computer tracks this spot and knows exactly where it is at any time. When the light pen is pressed against the screen, its light-sensitive tip registers when the spot passes. The computer then immediately knows where the pen is positioned, marks the point on the screen, and remembers it. As further marks are made, they can be joined up by the computer to produce straight or curved lines, and so any kind of outline.

The important aspect is that when all these features are drawn, the computer's storage remembers everything about them. By depressing a few keys, anything that has ever been drawn can be retrieved and put up on the screen. Time saving can be enormous because as the months go by, a library of standard shapes and parts—ones that a designer will use over and over again—can be extracted from the computer's memory and "inserted" into the new design, perhaps with some minor modifications.

Since the computer can be given three-dimensional instructions (the equivalent of plan, front and side elevations of a drawing), it can, by doing some mathematical transformations, produce a view from any angle the designer chooses.

In more sophisticated systems

the software allows a 3D solid colour model, with definition not far short of a colour photograph, to be "opened up" to see what is inside. With systems like this, separate component parts can be designed and then assembled on the screen.

Even cleverer software can allow the observer to "go inside" the object. In the case of a car, assuming that enough dimensional data about its interior is in the computer, the designer can "get into" the car and see the view from one of the seats.

## Computer-aided design

GOFFREY CHARLISH

Remarkable as that might seem, a combination of two other techniques, animation and finite element analysis, allows known impact forces to be "applied" to the front of the car and the resulting deformation observed. The car can be "crashed."

At a more down-to-earth level CAD allows not just the shell shape but also the components such as doors, panels, bumpers and bonnets to be separately designed, dimensioned and fitted into the shell. Tests can easily be made for interference of one part with another.

The total information in the computer's memory is known as a database. What most of the car makers are working towards is the extension and use of this database into areas beyond draughting, namely engineering (CAE) and manufacturing (CAM).

In CAE, the primary dimensional database is enhanced with other engineering information such as the mechanical, thermal and kinematic properties of the materials used. Then, the designer can use "what if" approaches to discover when a component will buckle, or the effects of heat or momentum, for example.

In CAM, computer-aided manufacturing, the database is used to generate the data needed to make the part. A common application is pro-

ducing the numerical control tapes used by machine tools, often with on-screen verification of cutter paths—for making tools, moulds, dies and deciding associated machining strategies.

Eventually, there is no doubt that CAD, CAE and CAM will come together with other manufacturing computing to give computer-integrated manufacturing, CIM. There will be one comprehensive database that will know all there is to know about the product, the machines that make it, the sales orders, costings and so on. Then each element in the design, engineering and manufacturing complex can be provided with just the data needed to do its job. It is a gigantic software proposition, but that is the way things are moving.

CAD is already a \$1.5bn a year business involving majors such as Comshare, IBM, Intergraph, GE (Calma and CAE International), Applicon, McDonnell Douglas, Autotrol Hewlett Packard. There are perhaps 100 companies in all offering CAD products.

Computerisation for example, has installed four Designer systems with 24 graphics workstations throughout the Longbridge design offices of the BL Austin Morris group. Applications include NC, electrical wiring and mass property analysis. The Jaguar plant in Coventry has a six workstation system and there are another eight at Land Rover, Solihull.

BL Systems has overall responsibility and systems development manager Bryan Clayton puts productivity gains at between three and four times. But he admits that getting all the existing data into the computer in the first place has been very time-consuming. So new designs have first priority.

Ford has no fewer than 440 workstations throughout the world, with satellite data links that allow designers to exchange ideas. The system, called PDGS (product design graphic system) has been developed over 16 years and world marketing rights were granted to Prime Computers last year.

General Motors' systems, called GMSolid and Colourstress, allow solid-looking representations of parts to be assembled on screen and the stress patterns of say, a car body, to be viewed as coloured areas.

## Introducing Delco Products.

*Your newest partner in automotive systems design.*

We're Delco Products and we design and manufacture a wide range of automotive systems and components. Systems that can provide you with the quality and flexibility you need for day-to-day and long-range planning. And we're here in Europe now—ready and willing to put our technology, worldwide resources and seventy-three years of experience to work for you.

We make Engine Cooling Systems. Emission Control Systems. A wide range of motors custom engineered to meet your vehicle requirements. Ride and Suspension Systems. Electronic Level Control Systems including air-adjustable shock absorbers, electronic height sensors and electric air compressors. And Body Systems featuring a complete line of power systems for door locks, wipers, antennas and more.

Our advanced Computer Assisted Design (CAD) technologies and Delco's rigorous testing standards develop products that meet or surpass the most stringent European specifications. The result is a system which is virtually tailor-made to meet your needs with a level of quality and reliability you should demand.

And when you work with Delco Products, you get something more. Service. That includes the help of our European Design Engineers and worldwide manufacturing capabilities including our newest plant in Castiz, Spain, that assures you'll get the parts you need, when and where you need them.

We want to work with you on your next automotive design project. Call us—we're systems experts.

For more information, write or call. Delco Products Overseas Corporation, High Street North, Dunsstable, Bedfordshire LU6 1BQ, England (582-64264).

**DELCO PRODUCTS**  
TECHNOLOGY WORLDWIDE



VEHICLE DESIGN IV

Innovators face rising frustration

UK

JOHN GRIFFITHS

LOTUS ENGINEERS have developed a computerised suspension so advanced it combines luxury car ride with racing car handling. It will lean the car into a corner like a motorcycle if asked, and will run over a brick at 90 mph with the driver feeling nothing and with no damage to the tyre.

However, it will appear in its first volume car application with a non-UK car maker. "We spent months talking to people in the UK," says Kimberley, director Mr. Mike Kimberley. "But the impression we got was that while they might like to do it, they didn't have the funds."

At last month's "Drive Forward" exhibition at the Design Centre in London, staged to promote British design, Tom Karen stood by inwardly fuming while Mrs Thatcher sat at the controls of multi-national Ford's van-like seven-passenger "concept car" for the 1990s. A few feet away, Karen's own concept car—in very similar vein—remained on paper.

"About 10 years ago I was predicting that cars would go this way. I tried to get UK industry, financiers and the Department of Trade interested. I didn't even get to first base; no encouragement—nothing."

Tom Karen is not an unknown, aspiring designer, but head of the Qute design consultancy which itself has won several Design Council awards. At the same exhibition, Merrick Taylor stood beside Motor Panels' award-winning Item Tech truck cab which will take the Rubeys Owen subsidiary of which he is managing director into the 1990s.

He says: "We have simply got to get changed attitudes, not just within industry but from banking, Government, the Treasury—and it's not a ques-

tion of a helping hand or lame ducks.

"The main problem of bankers not seeing what is self-evident is that they have had such a long period of the UK being non-competitive. One thing is the out-of-date concept of collateral, and the tightening of controls on the basis of shrinkage."

"But if we took the opposite viewpoint—what should be done to increase the collateral; trying for once to start thinking beyond the next balance sheet and addressing the long term—then we might start getting somewhere."

"As things stand, it sickens me when you get the banker who lectures UK industry about cost-effectiveness; about the need to be competitive and generate profits—and then when he's finished he goes out and climbs into his West German-built Porsche."

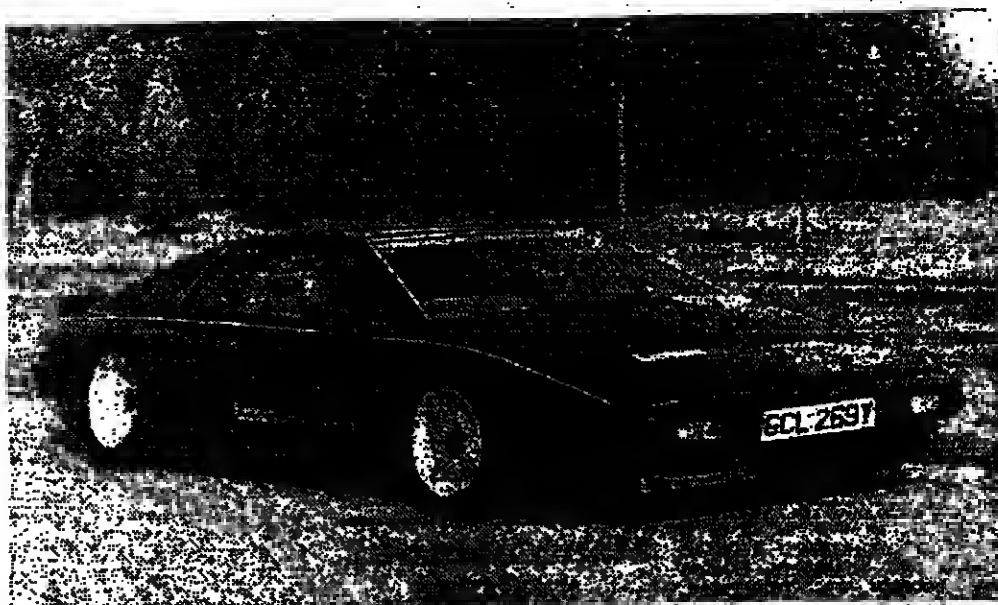
These comments, from chief executives of three companies whose design, innovation and engineering reputations considerably exceed their physical size, are just a few of the outward signs of anxiety, frustration, even anger, building up among the UK groups concerned with design, innovation and its utilisation in UK industry.

Behind these concerns, increasingly, is the fear that, if current attitudes do prevail, there is little which will prevent UK industry, in the longer term, slipping further and further behind in international competitiveness, as technology-based rivalry increases.

These concerns have a number of facets; broadly, they include:

A harshly critical attitude towards the financial sector. It dismisses as so much hyperbole the sector's claim that there are large amounts of venture capital around waiting to be directed at sound, innovative projects.

An almost as critical view of much of the UK motor components sector. The criticisms take the shape that the sector simply responds to demand,



Lotus: luxury car ride with advanced computerised suspension

with few attempts to innovate on its own behalf or market any self-developed innovations aggressively.

The consequence is that much design, research and development work undertaken in the UK sees the light of day as actual products only when they have been bought up and put into production by foreign manufacturers.

There is a view also that the various supportive schemes for design and innovation hatched by the Department of Trade and Industry are, in fact, off-target and simply not leading to adequate exploiting of the UK's design and innovation talents.

That these talents exist, and in abundance, is not in doubt: the design and advanced engineering departments of leading auto manufacturers overseas—not least Porsche, Audi and BMW—have at their very top UK-born and UK-trained designers and engineers who have departed of the low pay and low status accorded them in the UK.

It provokes Dr Nigel Chapman, director of the Royal College of Art's world-respected automobile design school, to describe the situation as "a tragedy bordering on the criminal."

There exists also a view that the role played by the UK's Design Council itself is in some respects misdirected; that its promotion of UK design is at an altogether too academic level, rather than geared to helping the hard sell in markets in Europe and overseas.

Not least, some innovators are ready to be critical of themselves:

"As designers we have failed," says Tom Karen. "We are not articulate enough; not good enough at knocking on doors. Our design society has failed. The Design Council says it is just interested in encouraging design. If they promoted the design industry, like footballers, like superstars, it would be more effective. There's little active promotion. But the Italians do it."

loudly enough; if you took the trendy design image away from the Italians what would you have—not very much."

"But we in the UK tend to take the professional approach—we're too proud to do something common like touting for work."

As always, it will be possible to point to exceptions to these generally stated views. Just one case in point is the development by GKN Technology of a world first composite glass fibre springs for trucks which save weight and are safer than steel springs, and promise to reap GKN a rich financial harvest world-wide over the coming years. More innovations are expected to come from its just-opened ERM research and development centre in the UK.

There is an exception, too, in the development by Lucas and Chloride, in association with UK truckmakers, of the world's first commercially produced electric vehicle.

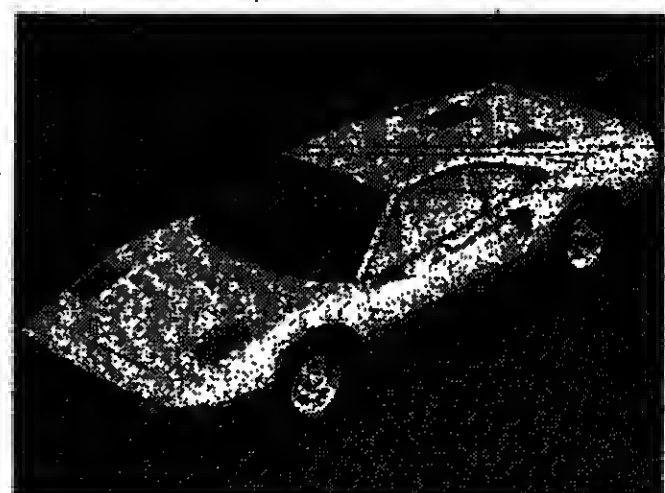
But equally, the mistakes can be seen in the attraction of Austin Rover with some of its component suppliers, and chairman Mr. Harold Masgrove's statements that without price and quality improvement, 45 per cent of its components, not the current 15 per cent, could wind up being purchased from abroad.

The contrast between the UK situation and the long-term "partnership" operations of Japan—where banks, industry and the Ministry of Trade and Industry co-ordinate long-term strategies with little concern for immediate profit—is not only ironic but downright dangerous in terms of the UK's ability to stay in the race, Merrick Taylor observes.

Fiat relies on outside designers

Italy

JAMES BUXTON



The 308 GTB Ferrari, as designed by Pininfarina, which recently returned dramatically to the headlines with news that it is to deliver 40,000 bodies for a Cadillac car to General Motors from 1985 to 1991—a deal worth \$600m

COMPUTER-AIDED design is transforming the way cars are designed, but will not change the fact that Fiat, the major Italian car maker, relies heavily on outside designers when it is developing a new car. That is the view from both manufacturer and designer in Turin, the heart of Italy's motor industry.

The presence of Fiat in Turin and its extensive use of outside designers helped establish the city as one of the major centres of car design in the world. Four companies, Italdesign, the company of Giorgetto Giugiaro, Pininfarina, Bertone and Ghia, part of Ford, are flanked by a host of smaller, artisanal concerns.

The success of Italy's car designers is usually attributed to the combination of the Italian natural flair for creative design and the practical with the artisanal tradition of the small, highly-skilled workshop. It is this that attracts other European car manufacturers to Turin and its designers, and which Fiat particularly values as it plans models for the future.

Computer-aided design (CAD) enables a designer to visualise and simulate problems and solutions in car design in a way never before possible. It therefore speeds the time in which the technical parts of cars can be designed, and also gives greater importance to accurate calculations of air drag coefficients, a crucial point in an energy-conscious world.

All this work can be done in the car manufacturer's design department—in the case of Fiat, in its styling centre. But according to Fiat, the very advantage of CAD makes the use of outside designers even more necessary.

"Everyone is applying these design methods, and that makes things much more competitive," said a company spokesman. "It is therefore all the more important that we produce what the market actually wants. And that is why we go to outsiders for help with styling."

According to Giorgetto

Giugiaro, head of Italdesign, the advent of CAD will mean at least as much work for outside designers as in the past.

"Companies may do more designing in-house," he says, "but things have become so competitive and design is moving so fast that the lifetime of the average car design is much less than it was. Therefore the car manufacturer will need new designs more frequently."

"The lifetime of the average car has been introduced in the past two years is six or seven years, compared with ten or 12 years in the past. Therefore, companies are going to be needing new designs all the time, from as many sources as possible. We are at an advantage because as a small company we can produce a complete new design in about two months less than a big manufacturer can. We can hand over a scale model in three months, instead of about six."

"CAD is quite useless for styling research," says Sig Giugiaro. "We will be getting it in due course, but it is expensive and when you only need it three days a month for engineering research, it is often cheaper to go to a specialist concern in Turin and use theirs."

For Fiat, "the aesthetic aspect is absolutely crucial. The designer must also be able to plan a family of cars, so that the life of the car can be prolonged."

Italdesign was responsible for designing the Fiat Panda, the utility car with its distinctive high body. According to Fiat, the highly successful replacement of the Fiat 127, was "born at Fiat with recourse to outside designers including Italdesign."

Italdesign is a little more proprietorial about its own role in the pattern of the Uno, and the car has a certain external similarity to the Panda.

The Fiat Regata the recent replacement of the 131 Mirafiori, is largely a product

of company's own styling centre.

The roles of the different car design houses is changing, as Fiat sees it. Italdesign is perhaps the company most adapted to the design and production needs of the big car company. That may help to explain its success, which began when in 1968 it was the contract to design the Alfa Romeo car for the same company's plant near Naples.

Under Giorgetto Giugiaro it then designed the Volkswagen Golf and its fellows, the Passat and Scirocco, which enabled the West German company to retain its place in car markets as the Beetle was withdrawn. Italdesign's

roll of honour includes several Japanese cars, models for Lotus and Mercedes, and the Lancia Delta and Thema. Lancia's new large saloon, to be launched by the Fiat subsidiary later this year or early next, is also an Italdesign project. But Giugiaro preferred to design "born-again" Golf in preference to Italdesign's conventional new version.

Pininfarina recently returned dramatically to the headlines with the news that it is to deliver 40,000 bodies for a Cadillac car to General Motors from 1985 to 1991, a deal worth \$600m. This spectacular contract, which will double the Turin company's turnover, also entails fixing the tax bottles from which the firm would receive they go to by sea.

The deal also emphasises the way in which Pininfarina is increasingly a manufacturer rather than simply a designer of cars, and that its design niche is in the specialised part of the car market rather than in the mass production models that Italdesign is strong in.

Pininfarina has designed the new four-wheel-drive version of the Alfa 75 and the estate car version of the same car. It is responsible for such cars as the Peugeot 505, Rolls-Royce Camargue and the Talbot Samba Cabriolet.

In the U.S., Pininfarina's name is now on the former Fiat SpA's list of major manufacturers for Fiat. Fiat decided last year to take its own name out of the U.S. car market. Similarly, the Fiat X1/9 is now called the Bertone X1/9 after its designer and manufacturer.

WHEN YOU HAVE PLASTICS MOULDING TALENTS LIKE CHLORIDE LORIVAL YOU APPRECIATE...



...THE IDEAL VEHICLE.

Austin and MG MONTEGO and their stable-companion Maestro, provide Chloride Lorival with the opportunity to do what we do best—The design production and finishing of plastic mouldings. Other vehicles for our talents, in the Austin Rover range, are the Austin Metro, the Triumph Acclaim and also the Land Rover.

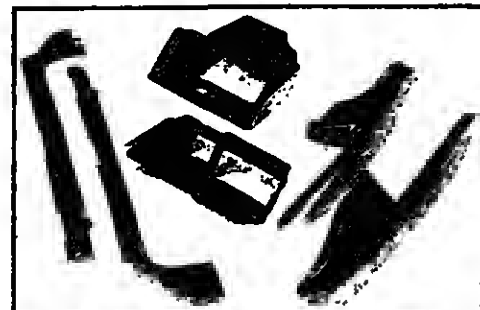
You provide the vehicle—we provide the expertise.

Or we can pool our talents. Our experts get together with yours—right from the initial concept stage and prepare technical precision mouldings to your entire satisfaction.

As well as a comprehensive design and development service, we can offer compact and structural foam injection moulding on a range of over 70 machines with shot weight from 1-700 ozs. We have the ability to set up complex assembly programmes to suit the specific needs of each customer, including facilities for hot-plate and

ultrasonic welding, screen printing, hot blocking and roll-on foiling.

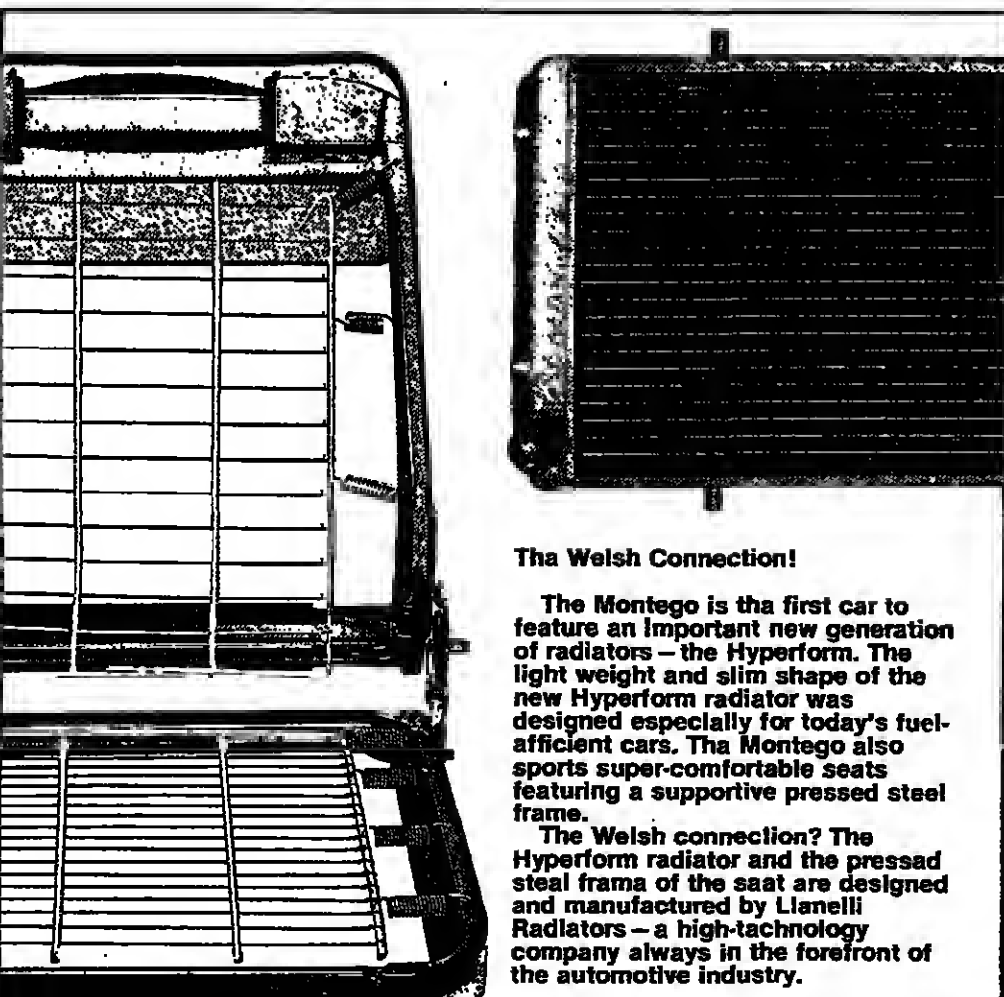
To find out more about what we can offer your company, contact our Marketing Department.



Chloride Lorival manufacture the following Montego components: The front sill finishers, the glove box pocket, the parcel shelf and rear sill finishers.

CHLORIDE LORIVAL

Chloride Lorival Limited, Little Lever, Bolton BL3 1AR. Telephone: 0204 72155. Telex: 63228.



The Welsh Connection!

The Montego is the first car to feature an important new generation of radiators—the Hyperform. The light weight and slim shape of the new Hyperform radiator was designed especially for today's fuel-efficient cars. The Montego also sports super-comfortable seats featuring a supportive pressed steel frame.

The Welsh connection? The Hyperform radiator and the pressed steel frame of the seat are designed and manufactured by Llanelli Radiators—a high-technology company always in the forefront of the automotive industry.

Llanelli Radiators  
Llanelli, Dyfed, Wales  
Telephone: Llanelli (05542) 58101  
Telex: 48387

Llanelli Radiators

Bringing tomorrow closer to today

SCI AKY congratulate AUSTIN ROVER for the MONTEGO

SCI AKY proudly supplied

Computerised Process Control and Monitoring System

ROBOFLY Automatic Body-in-white Framing Station

Automatic Body Tool-changing Facilities

World Leaders in Flexible Automation

John Griffiths

TRW Cam Gears the driving force in steering systems...



Original equipment suppliers to most major vehicle manufacturers.

Britain's leading independent manufacturer of steering and suspension equipment.

TRW Cam Gears Ltd  
Old Church Road,  
Cleveland,  
Aire 1521 6NS  
Telephone (0272) 878061





هكذا عندنا

VEHICLE DESIGN V

How Europe's consultants keep styles up to date

Japan

JOHN HARTLEY

JAPANESE VEHICLE manufacturers are reluctant to admit that they use outside consultants, but they are always seeking new styles and new technology, and verification that their work up to date.

Their reluctance stems from three main reasons—the industrial environment, their past experience. In Japan, it is the large companies that tend to lead in technology and so industry executives find it difficult to admit that they have to use a smaller, and by their definition, inferior, company for design.

Then, the Japanese vehicle manufacturers are still trying to show that their design technology is equal to that of the European companies, so again, they are reluctant to admit that they need to use outsiders to catch up.

In addition, Nissan suffered some damaging publicity following a dispute with Albrecht Goertz, who worked as a consultant on the design of the car that inspired the 240Z. There was a disagreement about Goertz's contribution to the 240Z and, although the matter was settled privately, neither Nissan nor its competitors want a repetition of that episode.

Nevertheless, Goertz was responsible for the styling of the original Silvia, while Pininfarina of Italy designed an early Datsun Bluebird. Toyota relied on American stylists for some versions of the Celica and Mazda's original Luce was styled in Italy.

More recently, Isuzu employed Itai Design to style the Piazza coupé, and then the 1.3-litre

"R-Car," due to be launched later this year. In addition, Honda has commissioned Pininfarina to carry out some design studies and Itai Design certainly influenced the design of Nissan's Micra.

Overall, though, there is a tendency for the Japanese companies to commission the Italian styling houses to carry out design studies for a certain model. Subsequently, the stylists inside the company modify the design—often turning an original design with character into the bland and characterless shapes for which the Japanese are renowned.

It was to avoid this sort of transition to mediocrity that Isuzu left Itai Design's Piazza almost exactly as Itai Design executed it. The result is that the car has real identity, especially in Japan where most cars tend to share the same basic styling characteristics. Of course some specialists,



Mazda MX-02 concept car

especially in diesel engine design, are consulted regularly by Japanese manufacturers. For example, Ricardo Consulting Engineers of Shoreham-on-Sea, England, numbers most of the Japanese companies among its customers, partly owing to the almost universal acceptance of the Comet Mark V swirl chamber system on small Japanese diesel engines.

However, the Japanese are always very keen to know what their rivals are doing, and by communicating with an establishment such as Ricardo, they keep in touch with trends.

Honda has a more open attitude to consultants than most of the Japanese companies, not least because it has a history of developing its own technology but going elsewhere when it lacks experience. For example, it was not until Honda's V-12 racing engine was put into a chassis designed by Eric Broadley of Lola Cars in England that Honda won a car Grand Prix. Now Honda has returned to the race tracks, but from the start has supplied engines to British racing teams who of course build their own cars—a highly specialised area.

Development secrets boost car industry mystique

SURROUNDED BY fields and woods, Porsche's motor vehicle development centre at Weissach in southern Germany is a hive of activity. The pace of expansion at Weissach has been so great that the hammers and drills of building workers have been ringing out more loudly at times than the sound of motor vehicles.

The spur to expansion has come not only from Porsche's own design and development projects but also from an increasing volume of contract work for outsiders, notably other vehicle manufacturers.

The bulk of the activity at Weissach is aimed at enhancing Porsche's own range of prestige cars. But between 30 and 40 per cent of the operation is taken up with projects for other organisations.

Porsche is among the most prominent of West Germany's consultant firms and experts engaged by the motor vehicle industry and components suppliers to handle technical design and development work. Like other large engineering groups, it receives considerable business from abroad, though mostly from within Europe.

West German motor vehicle manufacturers—and the various design and engineering outfits who work for them—are reluctant to disclose details of any interdependence. The volume of outside work in any case varies, with some companies, such as Daimler-Benz, aiming in principle to handle work within its own organisation.

Secrecy inevitably pervades a lot of design and development work and has become part of the mystique of the car industry. Security is not merely an effort to keep the competition guessing but also to avoid raising expectations among customers about innovations, with possible market repercussions.

However, outside designers and engineering consultants are a significant sector in West Germany and although much work is short term, some companies have long-standing relations with vehicle and component manufacturers. Among engineering consultant groups, a liberal sprinkling of key personnel are English or exerts with English engineering and motor vehicle experience.

With car manufacturers moving increasingly into computer-aided design (CAD) and

beyond that to computer-aided manufacturing (CAM), the outside specialists are currently confronted with the need to move with them in this direction.

The trend to CAD seems indisputable, but it is a headache for outside consultants — not simply because of the investment and training required but also because of the different systems which car manufacturers have introduced. There is some hesitancy for fear of taking a wrong step and some rather forlorn discussion about the desirability of compatible systems.

W. Germany

JOHN DAVIES

For reasons of secrecy and pride, the role of the outside designer and developer is apt to go unacknowledged or overlooked by all but the initiated in the industry. However, an instance of perhaps mutually beneficial acknowledgement occurred recently when Seat of Spain presented new engines and gears developed with the help of Porsche. Seat broached the subject with Porsche in 1981 and the contract was completed to Seat's basic requirements in time for presentation at the Geneva Automobile Salon earlier this year.

Porsche is also known to have carried out major work for the Soviet Union's Lada car project, as well as the development of a new Formula One engine.

Porsche's revenue from outside design and development work — so-called Frementwicklung — reached DM 80m (\$30.8m) in the financial year to last July 31, and is planned to rise to about DM 85m-DM 90m in the current financial year.

About 80 per cent of outside work involves motor vehicle projects. In keeping with the vehicle development tradition of the group dating back 33 years.

Herr Horst Marchart, responsible for development and sales of Porsche's external projects,

says the company plans to step up investment in Weissach to about DM 135m next year. Investment projects undertaken include a wind canal and an environmental centre.

Since the company set up the Weissach centre in 1972, the spot has been a virtual "building site," with new expansion continually under way, says Herr Marchart.

The number of employees in development work is also being steadily increased, rising from about 1,000 around 1979 to more than 1,800 at present. If the pace of expansion continues, the number will shortly reach 2,000.

Herr Marchart sees considerable opportunities for technical design and development work in the next few years, partly because of new standards likely to be brought in for motor vehicle manufacturers.

The company's longer-term goal, he says, is to raise the proportion of outside development work to about 50 per cent of Weissach's operations. So far, the volume of outside work has been rising steadily but so, too, has Porsche's development work for its own projects.

Herr Marchart says that Porsche is introducing CAD, recognising the potential benefits as well as the need to keep pace with the technological practices of customers. But incompatibility of systems is a headache. "Almost every car manufacturer has a different system," he says. "That makes things difficult."

Other engineering design and development concerns are becoming increasingly interested in CAD, feeling pressure from manufacturers to move in this direction.

"We know we are going to have to move to CAD," says Mr Terry Walkind, an English senior executive of Rucker, the engineering concern. Rucker, which employs about 450 people, has shifted the orientation of its projects increasingly from mechanical engineering to automotive engineering. About 85 per cent of its efforts now involve automotive projects.

Its nine offices are based strategically close to motor vehicle manufacturers and component suppliers — in such centres as Stuttgart, Munich, Ingolstadt, Wolfsburg and Cologne.

Foreign imports lead to changes on home front

IN THE flamboyant 1950s, when Detroit's car manufacturers seemed to be unable to put a foot wrong, the design studios carried enormous weight in the different organisations. Cheap fuel and good roads had produced the fashion for big cars and powerful engines.

The job of the designers was to clad this relatively unchanging concept of what a car should be with a shape that would catch the fancy and hold it long enough to make money, before fashion moved on to some further extravaganza.

At that time, the big three U.S. manufacturers had great confidence in the validity of their own judgment. Apart from Volkswagen, no one from outside the country had been able to make any substantial impression on the U.S. car-buying public.

In 1973, however, everything changed. As oil prices set off on the meteoric climb that was to last a decade, they began to see the need for adapting their models — and it soon became a necessity as the Japanese began to hammer home the message that U.S. customers were not

totally mesmerised by size and power.

These new perceptions of the industry were to spell a long period of eclipse for the U.S. designers. They had gained their position in the first place because their ideas were powerful selling tools. Suddenly, as oil prices began to take off, other factors began to look equally important in the market place, particularly fuel consumption.

The main focus in Detroit turned to engineering, as the manufacturers concentrated on reducing engine size, taking weight out of the cars, and shrinking them in overall capacity. Design had to take second place to the "down-sizing" crash programme, with the result that U.S. cars became distinctly less interesting — or flashy — to look at.

General Motors, for example, had developed its overpowering presence in the market by standardising engineering as much as possible across its five divisions, while ringing the changes in its styling. Over the past few years, by contrast, it has

been heavily criticised for producing relatively similar-looking vehicles across the whole of its range.

Following this down-sizing period, however, the wheel is turning yet again, back to a re-emphasis on design. This is mainly because the main thrust towards investing in smaller cars is over. But it is also due to the increasing threat from foreign cars, which have won wide acceptance despite the fact that their styling is radically different.

The U.S.

TERRY DODSWORTH

One response of the U.S. producers has been to draw on their design offices in their European subsidiaries, although this process is now on the wane. Another, though limited, approach has been to buy in European styling as Cadillac, the GM subsidiary, did recently for a new sporty version of its model range.

The most radical departure, however, is the establishment of new, separate design offices in California. This policy is related directly to the growth of Japanese car sales in the U.S., because it was via California that the Japanese won their entrée to the wider national market. Californians have proved enormously receptive to overseas styles, to the extent that imports now have just over 50 per cent of the market in the state.

For far too long the U.S. manufacturers, based in the north-eastern industrial belt, failed to respond to this challenge 2,500 miles away on the West Coast. The popularity of the Japanese, and other importers, was dismissed for a time as yet another Californian fad. But it has now become apparent that West Coast fashion has given an effective insight into the trend for the whole country.

Indeed, the Japanese recognised the importance of Californian taste several years ago. As early as 1974, a number of Japanese car companies established design studios on the

West Coast to soak up local ideas and test market new models.

Out of this process have come the more stylish vehicles which have replaced the severely utilitarian and economical models which established the first Japanese bridgehead in the U.S. Indeed, the Datsun 280Z, probably the best-selling sports car the world has seen, owes its inspiration to the company's efforts to tap into the Californian scene. Similarly, the Toyota Celica and the Mazda 626 are regarded as Californian products.

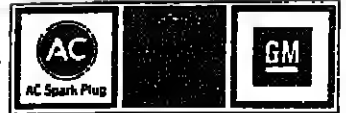
Last summer, Chrysler followed in the Japanese footsteps and opened a \$3m studio near San Diego, to be followed by GM, which has now established a Californian think tank at Thousand Oaks, near Los Angeles. Chrysler intends to develop full-sized designs in the design office, although GM is going more cautiously and will use its own studio to get a feel for the local market rather than producing usable production designs, at least for the time being.

NEW ADVANCEMENTS IN LCD AUTOMOTIVE INSTRUMENTATION DESIGN. AVAILABLE FROM AC...



IT'S DIGITAL. IT'S ANALOG. IT'S GRAPHIC. IT'S METRIC. IT'S ENGLISH. IT'S PRECISE. A COMPUTER. THE FUTURE.

It represents the kind of state-of-the-art thinking available to you now from AC! Shown above is the first standard equipment Liquid Crystal Display instrument cluster ever offered in a production automobile. It's standard in the 1984 all-new, hi-tech Chevrolet Corvette. IMPORTANT DESIGN ADVANTAGES: A proven microprocessor • Multi-colour graphics • Versatility in styling • Design flexibility.



AC SPERRY PLUG OVERSEAS CORPORATION P.O. BOX 336, CENTURY HOUSE, 500 AVEBURY BOULEVARD, CENTRAL MILFORD, VERMONT, U.S.A. TEL: 802-885-5300





**Salter Springs to mind**  
**021-553 2929**

Salter Springs and Pressings Ltd, is one of the largest spring manufacturing companies in the UK. It is a major supplier of quality springs and wireforms to the motor industry, offering improved product performance and economy in spring design and manufacture.

A free computer-aided design service ensures optimum design for a cost-effective performance while our wide selection of modern machinery provides the capacity for both small batch and large volume productions. A 24 hour delivery service is available for small batch productions, and springs can be tailor-made to suit individual needs.

With the aid of a highly experienced Research and Development Department, Salter have designed many special purpose machines to test oil springs against both technical and economic factors encountered in manufacturing processes.

**SALTER**

Salter Springs and Pressings Ltd, Spring Road, Smethwick, Walsley, West Midlands B66 1TF. Telex: 337877.

A subsidiary of Slaley Industries plc.

**17 LEADING CAR MANUFACTURERS SPECIFY UNIROYAL POWERGRIP HTD™ TIMING BELTS FOR CAMSHAFT.**

**SOME DRIVE!**

**UNIROYAL**

**POWERGRIP**

The belt for tomorrow's generation of engines  
Uniroyal Limited, Heathhall Factory, Dumfries. Tel: 0387 53111.

**CONGRATULATIONS**

Istel Limited congratulates Austin Rover on the launch of the elegant Austin Montego and are proud to be associated with the development of Key Computer Systems to support the production of this advanced new car.



Istel Limited, PO Box 5, Grosvenor House, Prospect Hill, Redditch, Worcestershire B97 4DQ. Telephone: Redditch (0527) 64274 Telex: 339954.

**W. A. THATCHER LTD.**

**RUBBER MOULDERS**  
Industrial — Automotive — Electrical

Pontygnath Tel. Ferndale  
Ferndale 730573 (0443)  
Mid Glam.  
CF43 3EE Telex: 497501

**More scope for specialist car assemblers**

VEHICLE DESIGN is an art—and one which will allow greater opportunity to medium-sized and specialist car assemblers over the next decade, according to Mr Dan Jones, one of the leading figures in a four-year international study co-ordinated by the Massachusetts Institute of Technology into the future of the automotive industry.

The project—financed by the major car producing countries: the U.S., Japan, the UK, West Germany, Italy, France and Sweden—involved 100 researchers across the world. Three closed conferences were held at which the views of governments, leading industrialists and trade unions were sounded.

Mr Jones, of the Science Policy Research Unit at Sussex University, is one of the five authors of the book to be published this autumn of the study's conclusions.

He says the findings "stand on their head" the conventional view of the automobile industry under which economies of scale squeeze out the smaller assemblers and mergers lead to the creation of a few surviving mega-companies along the lines of General Motors.

The differing markets for cars, emerging new components and the changing technology of production dictate otherwise, he argues. The concept of the "world car"—a vehicle using common components but with cosmetic changes to suit the particular national market—was being undermined by the individual demands of domestic markets.

The convergence rather than divergence of demand presents great potential for the medium-sized producer. Research suggests the smaller companies are more adept at seeking out a niche in a fragmenting market, Mr Jones says.

"This is exemplified by the European specialist producers—Volvo, Saab, Daimler-Benz, Jaguar and by Chrysler in the

U.S. and Honda and Toyo Kogyo in Japan." Austin Rover is actively moving in the same direction, adds Mr Jones, who has recently completed a study for West Midlands County Council on the prospects for the motor components industry in the region.

He maintains that, in contrast to the past 20 years, a whole range of technologies are now being incorporated into the design of cars. Spending on research and development, coupled with advances in fields such as electronics and new materials, means "a huge shelf of technical alternatives" are currently available to the automobile designer.

**Medium rank manufacturers**

ARTHUR SMITH

The new ideas are likely to be introduced but gradually. The result will be the same: "The car of the early 1990s will be completely different in almost every respect to the car of the early 1980s."

Mr Jones argues that it is the very pace of the present rate of evolution, existing part of the car that makes vehicle design an art. It was impossible to predict what the winning combination of all developments would be.

Such an environment provided enormous scope for many different producers to create quite distinctive cars by "picking off unique combinations of new technologies."

Nor was there any reason to believe that all the cars were in the hands of the very large companies with huge resources at their disposal. As in the past, many of the important advances would be introduced

by the smaller and medium-sized assemblers. But the biggest factor to change the prospects of the lower volume operators has been the recent revolution in production technology and the advent of flexible manufacturing.

The new flexibility has overturned the conventional wisdom that an assembler needs to produce at least 2m units a year to be viable.

As Austin Rover is now beginning to illustrate its facilities at Cowley, Oxford, a full range of models can be produced at one or two plants at a much lower total volume and still remain competitive.

Mr Jones argues that the changes in production technology are only just beginning and that more are in prospect. The economies of scale in design are also changing with the growing use of computer-aided design, engineering and manufacture.

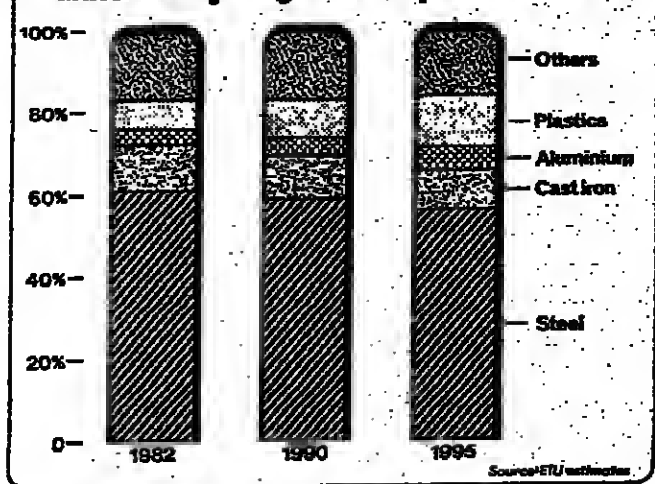
The "art" of the designer became that much more crucial in a period like now when all the major elements of competitiveness in the automobile industry—the markets, product, production equipment, and management strategies—were in a state of flux.

Mr Jones forecasts that most of the existing medium-sized companies will survive the next decade although it could be "precarious and testing." The two major problems to be overcome were volume of output—still critically high in engines and gearboxes—and size—the smaller companies were at a disadvantage in financing a wide development programme.

The answer to such constraints lay in a mixture of buying-in some major components, joint development and procurement co-operative design, and a substantial reliance on the acquisition of technical knowledge from outside companies.

"In other words, one has to trade in one's weak areas," Mr

**Materials by weight on EC-produced cars**



Jones says. But to be successful, companies needed to retain a strong engineering capability to make the correct technical choices, whether in purchasing or in absorbing outside technology.

Perhaps the best topical example of how a low volume producer must build upon its strengths in a particular market niche is Jaguar, the BL luxury car subsidiary soon to be privatised.

With total output of about 30,000 cars a year, although capacity being increased to 45,000, Jaguar is small even by comparison with its main competitors, BMW and Mercedes. But the company believes it has a bright future just by concentrating upon its own luxury car sector in which profit margins are high.

Mr John Egan, Jaguar's chairman, insists that the company is earning enough to cover not only spending on research, development and capital equipment (some \$20m last year) but also future investment needs.

Jaguar's specialisation means that much will hinge upon the success of the launch next year of the new XJ 40 model. But even that uncertainty is unlikely to deter investors when the company comes to the market later this year—another pointer to the changing view of lower volume producers spotlighted by the MIT study.

**The advent of new materials**

CONTINUED FROM PAGE 1, COL 8

mented in forecasting the advent of such cars in the 1990s, it would amount to nothing less than "a revolution" in the way in which cars were produced.

There remain huge problems before the Tomcevic becomes reality. According to Dr N. A. Waterman, of consultants Michael Neale and Associates, if all feasible substitutions of lighter plastics for metals were made in the car of 1990, the average weight of plastic per car would rise from 5.8 kg in 1980 to 104 kg. These items would include wings and aerodynamic underbody shells.

They would also increase by a factor of 10, the price of such a car. Such a dramatic, really, un-economic increase in a car's cost would indeed be partly due to the plastics being more expensive than metals as a material.

But much the biggest factor. Steel in any case will be difficult to displace, not least because steelmakers are not about to let go. A lucrative market without a fight and are developing yet stronger, higher-carbon steel to save weight, while the steel supply structure is well established internationally, in contrast to plastics.

Nevertheless, given the development of appropriate processing ideas, such as faster curing resins, stampable thermoplastic sheet and similar advances, "plastics could just conceivably compete with steel for a higher proportion of the car."

Steel in any case will be difficult to displace, not least because steelmakers are not about to let go. A lucrative market without a fight and are developing yet stronger, higher-carbon steel to save weight, while the steel supply structure is well established internationally, in contrast to plastics.

Inevitably, too, within the motor industry, there will be some inerts as designers and engineers tackle perhaps with initial timidity, the new problems of an unfamiliar material.

What materials are used, in the end, will depend on bottom line criteria such as what best meets all the design requirements at the lowest overall cost. Even that is not a simple question of material costs, because no manufacturer will mind paying a 2x premium for, say, a plastic substitute if it is going to save 22x in assembly time or lower capital investment.

Apart from sweeping changes such as using adhesives rather than welding to assemble such cars, the implications for everyone involved in the motor business are enormous.

**Time scale**

How fast will the transition be? According to Mr Yutaka Kizume, head of Nissan's research and development department, the current composition of cars is about 80 per cent steel, 3 per cent aluminium and just under 5 per cent plastic.

"By 1990, the proportion of steel is expected to fall to 60 per cent, with aluminium and plastic each rising to 40 per cent. In addition, ceramics will account for about 2 per cent."

"This however, is only an estimate—the rising cost of plastic and aluminium could deter their wider use."

**Heavy investment in research**

MOTOR COMPONENT manufacturers around the world are under increasing pressure to fulfil a number of requirements from the major motor companies, relating primarily to weight, reliability, durability and most important of all, cost.

Increasingly, the purchasers of motor components are looking for further integration of a range of items previously fitted as single units, and are looking to the component suppliers to carry out the necessary research, development and design work to achieve this.

In the face of these demands, major British components manufacturers have had to invest more heavily in research and development equipment, from building to test rigs, with strong emphasis on computer-aided design and manufacturing systems.

GKN, for example, has recently invested more than £7m in a new products development centre at the Wolverhampton headquarters of GKN Technology, where a further £3m a year is spent on improving existing products and developing new ones.

The most startling of these is GKN's new composite epoxy resin and glass fibre leaf spring for commercial vehicles, a project launched in 1976 and now attracting inquiries from around the world.

Dr Peter Watson, GKN general manager, products development, pointed out that motor manufacturers will be buying far more technology from their components suppliers in future.

The new spring, which had

undergone far more stringent tests than the steel spring, was particularly important since it was made of a material which was not only lighter than steel, but less likely to fracture—one of the major problems with commercial vehicle springs.

GKN Technology employs around 300 people to solve problems for group companies, develop new products and carry out a limited amount of pure research, which occasionally turns up an important new process or material.

Importantly, it is also dedicated to updating manufacturing systems within the group, in which investment is now rising to around £100m a year. It is recognised that it is as important to be able to manufacture new components efficiently.

Computer-aided design has had important effects on the design of many metal components since the ability to pinpoint areas of high and low stress has enabled designers to eliminate unnecessary metal, thereby reducing weight. However, this has had implications for related components, where the weight change had to be taken into account.

In addition, advanced testing techniques such as the computer systems which help assess the expectancy of existing parts, are now helping to speed up the development of new generation of components.

GKN believe that components will increasingly be supplied in packages of related functions, since their integration tends to reduce manufacturing and assembly costs. "We

have traditionally made axle bearings, and now we are making springs, so they can be sold as a package. The problems with components usually arise where they are joined, so the advantages are obvious," GKN says.

One of the major areas of research at present relates to pistons, since they account for a high proportion of mechanical losses in an engine. "The AE group is devoting considerable resources to reducing piston assembly weight, reducing friction and the maintenance improvement of their integrity."

**Components**

LORNE BANLING

Recent developments in the piston casting process are making possible new techniques for improving piston performance, according to AE. The fatigue strength of the squeeze cast material compares favourably with that of a forged, AE believes and has a clear advantage over a gravity casting.

"However, of greatest interest to the piston designer is the freedom which the method allows for the incorporation of alternative metal inserts without the risk of voids or porosity," AE said.

An insert of close knit metal or ceramic fibres can be incorporated for local reinforcement, an increasingly important

technique for the motor industry as a whole. Lucas Industries has announced large investments in high technology manufacturing systems for its increasingly sophisticated range of electronic and non-electronic motor components.

Dr Tony Jarrett of Lucas said recently that the field of technology management was being approached under five broad headings—technology forecasting, product technology audits, developing a technology base, technology information transfer—and technology education.

At Lucas, technology forecasting was a "continuous exercise." In forecasting the shape and nature of vehicles of the future, the company relied not only on its group research centre but on input from major subsidiaries, with specialist knowledge in the fields of electronics, braking systems, and diesel fuel injection equipment.

In addition it drew on outside information sources about trends in design and development across the world.

Each Lucas operating company has its own technology audit of capability and capacity. These were revealing exercises, Dr Jarrett said, and the objective of the audits were to check that business plans were sufficiently designed to construct a long-term product engineering plan, to unearth areas of technology weakness and to provide a feedback to the business planning activities to ensure that these and the technical resources were properly matched.

Each Lucas operating company has its own technology audit of capability and capacity. These were revealing exercises, Dr Jarrett said, and the objective of the audits were to check that business plans were sufficiently designed to construct a long-term product engineering plan, to unearth areas of technology weakness and to provide a feedback to the business planning activities to ensure that these and the technical resources were properly matched.

Each Lucas operating company has its own technology audit of capability and capacity. These were revealing exercises, Dr Jarrett said, and the objective of the audits were to check that business plans were sufficiently designed to construct a long-term product engineering plan, to unearth areas of technology weakness and to provide a feedback to the business planning activities to ensure that these and the technical resources were properly matched.

**The burden of design grows heavier**

CONTINUED FROM PAGE 1, COL 5

generates excitement. There is little point in producing a vehicle so efficient in its aerodynamic qualities that it sacrifices accessibility, comfort and interior space to an unreasonable degree."

This does not imply a conservatism, however. As Mr Axe's interior design director, Richard Hamblin, points out, there is no reason why there should not be major developments in all areas of the car. One of the areas his own team is researching is a "super credit card" used to gain entry to the car, and with coding to automatically adjust steering column, mirrors, heating ventilation—even "operate petrol pumps, debit the driver's account and open the garage door at home."

One effect of the computerisation of the design process has been, obviously, to enhance enormously the in-house design capabilities of a manufacturer. Inevitably, this has raised the question of what this capability means for the livelihoods of the independent design and engineering consultancies which have long made much of their living from design services to the big manufacturers.

But well-known design

houses, like Ital Design of Italy, stress that computers cannot do the job of a designer. Concepts, and that the design houses' original thinking, plus the need of manufacturers for a faster flow of designs, will keep them in business.

Perhaps there are few better examples than International Automotive Design in the UK. John Shute, its chairman, started the company only in 1976, with a handful of people. It now employs 225 people, half of them overseas at client manufacturers' plants. Its consultant engineering, styling and prototype building service are expected to produce a £7m-plus turnover this year and this month it has just finished installing nearly £1m worth of its own computer-aided design equipment on par with manufacturers'. Its computer room is already working on double shifts.

Shute is intensely aggressive about the business: "We're now in a position to rival the Italian design houses, some of which have in any case gone down in their reputations." He acknowledges, however, that the UK design and engineering houses have been slow to market their expertise internationally, even though their skills "rank with the best in the world."

But that's symptomatic of the whole UK motor industry—

the Continentals simply are much better at telling you how good they are than we are.

He has no time for the doubts sometimes expressed about the technical, rather than production capabilities, of Japanese manufacturers. The vehicles at the last Tokyo show, he says, "were mind-bending. If Ford, VW etc want to stay in business they had better watch out. The Japanese have got super ideas there."

In turn, Lotus believes that it should be compared with Porsche of West Germany, rather than the Italians. "We can do all the things that Porsche do... certainly Toyota (now with a 17 per cent shareholding in Lotus) see us as that," points out its chief executive, Mr Michael Kimberley.

Lotus almost entirely contract engineering business with the De Lorean development contract in 1978, has expanded this side of its business substantially, with several dozen client companies.

But Mr Kimberley makes the same point about the UK industry's marketing abilities and design take-up, even more strongly: "Our design is second to none; our exploitation of it is bloody awful."

He expresses a deep worry that while much innovative design is produced in the UK, it is being bought up not by UK

industry, but by rivals, mainly from Japan and the U.S.

"It should, he suggests, be a joint effort of government and industry, to ensure that the design capabilities of Japanese manufacturers, the vehicles at the last Tokyo show, he says, "were mind-bending. If Ford, VW etc want to stay in business they had better watch out. The Japanese have got super ideas there."

One problem, he suggests, is that "if you look at the typical board of a large UK company, what sort of product knowledge have its members got? Usually hardly any. That's where the Japanese score—the top two are always finance and engineering men, with commercial training on top of engineering training."

The problem though, he says, goes deeper. "We've got to change the whole educational system so that good design is encouraged."

Tom Karen, managing director of Ogle Design, broadens the argument further, into what he sees as others in the design field face in a chronic shortage of venture capital funding for innovation.

"The Japanese actively scavenge for good ideas; from the U.S., from Europe, anywhere. What sort of response do you get in Britain? We don't want to buy, we don't want to risk it—in short, go away."

"Why is it not possible for the financial world to say to the Government: 'for every pound you put in to finance design and development, we will match it'—that's right, even if it's not linked to a direct financial return?"

**ADVERTISEMENT**

**HOOVER UNIVERSAL**, Britain's largest Automotive Seating Manufacturer, will be supplying the Rear Seat Back units for the Austin Montego.

Hoover's Design and Development Department in conjunction with the Austin Rover Group Engineers at Canley and Oxford, have developed units for the Austin Montego of fabric, steel construction. In parallel with the fabricated steel units, Hoover Universal carried out an evaluation of plastics for the construction of Automotive Rear Seating on a quality strength cost-weight ratio, considering all forms of plastics technology embracing European, American and Japanese capabilities. This programme was supplemented by a Government Grant "Support for Innovation." The conclusion was reached that in the foreseeable future, using the latest technology, in production methods, steel has significant advantages.

Hoover Universal Inc, Hoover Universal (UK)'s Parent Company, has extensive involvement in the Plastics Industry, manufacturing both machinery and products for varied markets, including the Motor Industry.

At Hoover Universal's Leigh-on-Sea factory, the Austin Montego Seating will be produced on the most modern equipment available, incorporating a multi-robot set-up, combining Spot and CO welding, featuring feed back controls through microprocessors to ensure 100% Quality Assurance. This £2 million investment has been constructed by Hoover Engineering and local sub-contractors with the aid of a Government Robot Support Grant. The Company considers that this is the most technically advanced equipment of this nature in the world.

Hoover Universal (UK) are pleased to be associated with the Austin Rover Group in the development and supplying of components for this new vehicle. We take this opportunity to wish the Austin Rover Group every success for this new car in the Market Places of Britain and overseas.

**HOOVER UNIVERSAL (U.K.) LTD.**  
55 Progress Road, Leigh-on-Sea, Essex S89 5JJ  
Tel: Southend (0762) 524231 Telex: 92241

**CAP COURTAULDS AUTOMOTIVE PRODUCTS**

**CAP'S WORLDWIDE INVOLVEMENT IN THE SUPPLY OF AUTOMOTIVE FABRICS GIVES CAR MANUFACTURERS:**

**INTERNATIONAL DESIGNS**

**INTERNATIONAL PERFORMANCE**

**INTERNATIONAL SERVICE**

CAP — THE INTERNATIONAL SUPPLIER OF AUTOMOTIVE FABRICS

PO Box 29, Wardley Mills, Manchester Road, Worsley, Manchester M28 5WG

Telephone: 061-799 4851 Telex: 645478 FAX: 061-799 1607

**STADCO**

Using a balanced design of Flexible and Dedicated Assembly Technology with rugged Engineering, STADCO-AED meets the needs of tomorrow's winners.

**WORLD-WIDE SUCCESS TO LHM 11**

Assembly Equipment Division Shrewsbury Tool & Die Co. Ltd. Shrewsbury Tel (0743) 52227. Telex 35246

A member of Hail Engineering (Holdings) Plc